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The Mineral Industry of Pennsylvania

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By

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U. S. Bureau of Mines

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DEPARTMENT OF INTERNAL AFFAIRS
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The Mineral Industry of Pennsylvania

This chapter has been prepared under a cooperative agreement for the collection of mineral data, except mineral fuels, between the Bureau of Mines, United States Department of the Interior, and the Pennsylvania Bureau of Topographic and Geologic Survey.

By Robert D. Thomson [1] and Mary E. Otte [2]

MINERAL production in Pennsylvania totaled $971 million (an increase of $45 million (5 percent) over 1954) but was $151 million less than in 1953. Of the 25 mineral commodities produced in 1955, 18 increased in value of output. Bituminous coal, anthracite, cement, stone, and petroleum, in order of decreasing value, were the most important economically.

TABLE 1.—Mineral production in Pennsylvania, 1954–55 [1]

Mineral	1954		1955	
	Short tons (unless otherwise stated)	Value	Short tons (unless otherwise stated)	Value
Cement:				
Portland—376-pound barrels	43,068,234	$117,912,299	45,526,877	$132,965,136
Masonry—do	(2)	(2)	2,562,701	9,003,906
Clays	3,524,398	10,243,485	4,019,909	12,413,093
Coal:				
Anthracite	29,083,477	247,870,023	26,204,554	206,096,662
Bituminous	72,010,101	378,658,531	85,713,456	440,451,700
Cobalt (content of concentrate)—pounds	517,124	(3)	478,840	(3)
Gem stones			(4)	60
Gold (recoverable content of ores, etc.)—troy ounces	1,317	46,095	1,610	56,350
Iron ore (usable)—long tons, gross weight	708,109	(3)	(3)	(3)
Iron oxide pigment (crude)			519	6,714
Lime (open-market)	1,081,583	13,206,310	1,424,051	17,631,795
Natural gas—million cubic feet	145,934	43,634,000	99,172	29,652,000
Natural gas liquids:				
Natural gasoline—thousand gallons	4,830	320,000	4,305	281,000
LP-gases—do	1,008	89,000	995	90,000
Peat	15,621	141,352	23,277	219,628
Petroleum (crude)—thousand 42-gallon barrels	9,107	31,150,000	8,531	30,200,000
Sand and gravel	14,218,444	20,595,990	13,312,971	20,511,847
Sericite schist	1,898	8,541	(3)	(3)
Silver (recoverable content of ores, etc.)—troy ounces	8,415	7,616	10,379	9,394
Slate	194,205	4,419,439	186,035	4,421,298
Stone	40,521,756	61,193,419	44,437,623	70,056,080
Sulfur (recoverable elemental sulfur)—long tons	(3)	(3)	7,738	263,370
Tripoli	(3)	(3)	990	21,780
Value of items that cannot be disclosed: Mica, pyrite, and minerals indicated by footnote 3		12,548,574		15,819,073
Total Pennsylvania [5]		925,545,000		971,064,000

[1] Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
[2] Data not available.
[3] Figure withheld to avoid disclosing individual company confidential data.
[4] Weight not recorded.
[5] The total has been adjusted to eliminate duplication in the value of clays and stone.

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One or more mineral commodities were produced in every county. Major producing counties, in order of decreasing value, were: Washington, Luzerne, Northampton, Greene, Cambria, Allegheny, and Schuylkill. In 1954, Luzerne County had ranked first, followed by Washington, Schuylkill, Northampton, Greene, Cambria, and Allegheny.

EMPLOYMENT IN MINERAL INDUSTRIES

Employment.—Data released by the Bureau of Statistics, Department of Internal Affairs, Commonwealth of Pennsylvania, indicated that the 1,649 mineral-industry installations employed 87,959 persons in 1955. The Pennsylvania Bureau of Statistics reported total wages and salaries to be $352,307,000 and capital investments at $694,865,000.

TABLE 2.—Employment, wages, capital invested, value of production, and value added by manufacture of selected mineral industries in Pennsylvania, 1955 [1]

Commodity	Number of mines reporting	Total number of employees	Total wages and salaries (thousand dollars)	Capital invested (thousand dollars)
Clay	25	301	771	1,704
Coal:				
Bituminous	933	49,433	215,174	431,971
Anthracite	261	27,440	92,792	168,316
Reclaimed from streams	13	140	499	6,952
Glass sand	9	452	1,906	4,012
Sand and gravel	71	1,390	6,126	17,228
Slate:				
Roofing	7	392	1,190	501
Miscellaneous	12	451	1,588	1,647
Stone:				
Cut	29	427	1,290	1,258
Crushed	101	2,913	11,323	27,954
Marble and granite	124	928	3,184	3,252
Miscellaneous	21	1,761	7,722	14,125
Miscellaneous [2]	43	1,931	8,742	15,945
Total	1,649	87,959	352,307	694,865

[1] Bureau of Statistics, Department of Internal Affairs, Commonwealth of Pennsylvania.
[2] Includes iron ore, ganister rock, and mines and quarries unclassified.

TABLE 3.—Employment and total wages and salaries for selected mineral industries in Pennsylvania, 1951–55 [1]

Commodity	1951			1952			1953			1954			1955		
	Number of mines reporting	Total number of employees	Total wages and salaries (thousand dollars)	Number of mines reporting	Total number of employees	Total wages and salaries (thousand dollars)	Number of mines reporting	Total number of employees	Total wages and salaries (thousand dollars)	Number of mines reporting	Total number of employees	Total wages and salaries (thousand dollars)	Number of mines reporting	Total number of employees	Total wages and salaries (thousand dollars)
Clay	15	189	506	14	202	522	17	211	555	15	163	363	25	301	771
Coal:															
Bituminous	1,174	83,470	318,892	1,116	75,620	271,642	1,069	68,054	283,260	997	55,380	197,678	933	49,433	215,174
Anthraeite	247	61,014	211,737	254	56,807	197,410	225	46,197	148,312	227	35,496	106,817	261	27,440	92,792
Reelaimed from streams	16	311	670	17	319	744	17	217	705	14	181	572	13	140	500
Glass sand	10	519	1,795	10	521	1,673	9	543	2,059	9	504	1,815	9	452	1,906
Sand and gravel	41	1,153	4,590	39	1,190	5,312	38	1,124	5,385	37	1,024	5,051	71	1,390	6,126
Slate:															
Roofing	9	542	1,545	8	483	1,529	7	391	1,277	7	379	1,109	7	392	1,190
Miseellaneous	14	588	1,791	12	503	1,516	12	472	1,534	12	480	1,597	12	451	1,588
Stone:															
Cut	16	208	653	14	194	641	14	180	628	15	276	1,087	29	427	1,290
Crushed	83	2,366	7,447	80	2,204	7,508	77	2,187	7,252	78	2,243	8,197	101	2,913	11,322
Marble and granite	135	961	2,743	134	911	2,913	127	928	2,921	125	941	3,028	124	928	3,184
Miseellaneous	19	2,130	8,074	19	2,025	7,487	19	2,116	8,702	20	1,880	6,599	21	1,761	7,722
Miseellaneous [2]	34	1,833	7,397	35	1,866	7,952	33	1,889	7,932	39	1,779	7,284	43	1,931	8,742
Total	1,813	155,284	567,840	1,752	142,845	506,849	1,664	124,509	470,522	1,595	100,726	341,197	1,649	87,959	352,307

[1] Bureau of Statistics, Department of Internal Affairs, Commonwealth of Pennsylvania.
[2] Ineludes iron ore, ganister roek, and mines and quarries unelassified.

REVIEW BY MINERAL COMMODITIES

MINERAL FUELS

Coal.—Production of anthracite declined 10 percent compared with 1954, decreasing for the fifth consecutive year. The average value per net ton was $7.86 compared with $8.52 in 1954 and $9.67 in 1953. Anthracite produced underground dropped from 58 to 55 percent of the total. Output from strip mines increased from 28 to 30 percent; production from culm banks and dredges remained steady at 12 and 3 percent, respectively. Of the total tonnage, 84 percent was shipped out of the producing areas; 14 percent was sold to local industry; and 2 percent was consumed as colliery fuel. Luzerne County led in production, supplying 37 percent of tonnage and 42 percent of value. Other productive counties were: Berks, Carbon, Columbia, Dauphin, Lancaster, Lackawanna, Lebanon, Northampton, Northumberland, Schuylkill, Snyder, and Sullivan.

Output of bituminous coal increased 19 percent over 1954, totaling 85.7 million short tons valued at $440.5 million. Value averaged $5.14 per ton, 12 cents lower than in 1954. Bituminous coal was produced from underground, strip, and auger mines; underground mines supplied 76 percent of the 1955 output. About 77 percent of the coal produced was undercut by machines, 20 percent was undercut by continuous mining machines, and the remainder was cut by hand or shot from the solid. Both electric and air drills were used to drill blastholes; electric drills furnished 95 percent of production for mines using power drills. Locomotives, rope hoists, shuttle cars, animals, and mother conveyors were used for underground haulage. Electric locomotives were the predominant type of haulage in 1955. In mining coal by strip methods, electric, diesel, and gasoline power shovels and draglines were used. A greater number of shovels and draglines with bucket capacity of less than 3 cubic yards was operated. Of the total 1955 bituminous-coal output, 68 percent was cleaned mechanically. Washington County led in production value, followed by Greene, Cambria, and Allegheny Counties.

Coke.—Coke production in 1955 increased 30 percent over 1954, totaling 20.8 million net tons, owing mainly to a greater demand for metallurgical coke. Pennsylvania led in quantity and value for both beehive and oven coke produced in the United States, supplying 26 percent of the output from slot-type ovens and 76 percent from beehive ovens. Fourteen plants, operating 4,149 ovens, carbonized 28,512,000 net tons of coal to produce 19,489,000 net tons of oven coke. A total of 2,125,000 net tons of coal was carbonized in 8,426 beehive ovens to produce 1,313,694 net tons of beehive coke. The average value for oven coke at the ovens was $14.96 compared with $12.35 for beehive coke. Coke produced in Pennsylvania was shipped to blast-furnace, producer-gas, water-gas, and other industrial plants, and foundries and for residential heating. Blast furnaces consumed 96 percent of the coke.

Peat.—Pennsylvania ranked fifth among the 18 peat-producing States, producing 23,000 short tons valued at $220,000. The 49-percent increase in tonnage and 55-percent rise in value over 1954 were due mainly to expanded markets in agriculture and horticulture.

TABLE 4.—Annual capacity of coke ovens, December 31, 1955, in net tons

Name of company	Name or location of plant	Number and type of ovens						Annual coke capacity (net tons)
		Beehive [1]		Slot-type				
		Machine drawn	Hand drawn	Koppers	Koppers-Becker	Semet-Solvay	Wilputte	
	Allegheny County:							
United States Steel Corp	Clairton			661	592		314	7,833,800
Pittsburgh Coke & Chemical Co	Neville Island				140			960,000
Jones & Laughlin Steel Corp	Pittsburgh			300	79			1,387,000
	Beaver County:							
Jones & Laughlin Steel Corp	Aliquippa				352			2,190,000
Crucible Steel Co. of America	Midland			100	113			877,200
United States Steel Corp	Bucks County: Fairless						174	952,100
Bethlehem Steel Co	Cambria County: Johnstown				77	88	151	1,836,000
Do	Dauphin County: Steelton				130			768,000
Philadelphia Electric Co	Delaware County: Chester				25			118,000
Interlake Iron Corp	Erie County: Erie						58	267,500
	Fayette County:							
Emerald Coal & Coke Co	Alicia No. 1	400						346,400
	Allison	395						336,000
Speers Coal & Coke Co	Belle Vernon	58	14					25,000
United States Steel Corp	Collier	315						198,200
Bortz Coal Co	Daugherty, Sapper, Stanbaugh, and Central	386	32					308,700
J. & G. Coke Co	Davidson	34						22,500
Bridgeview Coal Co	Donald No. 2	240						150,000
Phillips Coal & Coke Co	Fairbank	60						42,000
Weirton Coal Co	Isabella	136						120,000
Lindsey Coal Co	Jimtown		20					9,600
Ruane Coal & Coke Co	Laughead	60						36,000
United States Steel Corp	Leisenring No. 1	290						173,700
	Leisenring No. 2	486						267,000
Ezzi Coal & Coke Co	Lincoln	50						37,500
Eberly Coal & Coke Co	Oliver No. 2	214	16					120,000
United States Steel Corp	Phillips	354						237,300
Leckrone Coal & Coke Co	Puritan Nos. 1 & 2	80						70,000
Pennsylvania Coal Co	Hoover Nos. 1 & 2	120	78					156,000
Fayette Fuel Co	Redstone	143						55,000
John J. Bobak	Searights		55					30,600
United States Steel Corp	Shoaf No. 1	288						177,800
J. H. Hillman & Sons Co	Tower Hill No. 2	254						219,600
Ruane Coal & Coke Co	Wynn	170						110,000
J. H. Hillman & Sons Co	Greene County: Poland	102						81,200

See footnote at end of table.

TABLE 4.—Annual capacity of coke ovens, December 31, 1955, in net tons—Continued

Name of company	Name or location of plant	Number and type of ovens						Annual coke capacity (net tons)
		Beehive [1]		Slot-type				
		Machine drawn	Hand drawn	Koppers	Koppers-Becker	Semet-Solvay	Wilputte	
	Indiana County:							
Yanity Bros. Coal Co	Coral		155					93,000
Rochester & Pittsburgh Coal Co	Ernest and Coral	359						233,000
Lucerne Coke Co	Lucerne	264						200,000
Smith-Byrne Co., Inc	Graceton	120						60,000
Alan Wood Steel Co	Montgomery County: Swedeland			110	41			600,000
Bethelem Steel Co	Northampton County: Bethlehem			212	284			2,136,000
Philadelphia Coke Co	Philadelphia County: Philadelphia				74			490,000
	Westmoreland County:							
King Coal & Coke Co	Arona		20					12,000
Eagle Coal Co	Atlantic No. 2	120						55,000
Stewart Coal & Coke Co	Beatty No. 2 and Whitney	280						201,600
Brinkerton Coke Co	Calumet		20					13,200
Calumet Fuel Co	----do		36					23,600
C. W. Dillon	----do		110					72,000
Carpentertown Coal & Coke Co	Carpentertown	310						175,000
Beatty Coal Co	Duquesne		30					16,000
Hester Coke Co	Hester	43						30,000
Humphrey-Connellsville Coke Co	Humphrey	145						70,000
Jamison Coal & Coke Co	Jamison No. 2	400						272,000
Mammoth Coal & Coke Co	Mammoth No. 1	105	24					72,400
King Bros. Coal & Coke Co	Marguerite	217						120,000
Pittsburgh Steel Co	Monessen				74			500,000
John Harhai	Peanut		17					10,200
Eagle Coal Co	Salem	221						100,000
Carpentertown Coal & Coke Co	Standard	277						160,000
Joseph J. Hacker	Trauger		32					12,000
Kara Coal & Coke Co	----do	33						18,000
United Coke Co	United		41					21,000
Hepler Coal & Coke Co	Whycl	32	3					21,600
King Coal & Coke Co	----do		25					15,000

[1] Includes ovens reported in existence Dec. 31, 1955, whether idle or active. Does not include ovens known to have produced coke for which no report was submitted by operator.

Varieties of peat produced in 1955 were humus, moss, reed, and sedge. Peat was produced in Erie, Lawrence, Luzerne, and Mercer Counties, with Luzerne leading in production.

Petroleum and Natural Gas.—Output of both petroleum and natural gas dropped in 1955. Petroleum decreased 6 percent in barrels and 3 percent in value. Natural gas showed a substantial drop of 47,000 million cubic feet and nearly $14 million in 1955, a 32-percent drop compared with 1954.

The 717 wells completed in Pennsylvania in 1955 included 194 oil wells, 291 gas wells, 149 service wells, and 83 dry wells.[3]

Footage totaled 1,817,000 feet, averaging 2,534 compared with 1,331 in 1954. Twenty-six wells were drilled to a depth of under 1,250 feet; 490 to 1,250–2,500 feet, 114 to 2,500–3,750 feet, 27 to 3,750–5,000 feet, 48 to 5,000–7,500 feet, 11 to 7,500–10,000 feet, and 1 to 10,000–12,500 feet. Of the 291 gas wells completed in 1955, 284 were field wells and 7 wildcat wells; these compare with 480 and 3, respectively, in 1954.

Proved recoverable reserves for crude oil in Pennsylvania were estimated to be 140 million barrels on January 1, 1956, and for natural gas at 750 billion cubic feet.

Natural-gas liquids were produced as byproducts of natural gas.

METALS

Iron ore.—Production of iron ore measured by shipments in Pennsylvania increased in 1955 compared with 1954. The entire output of ore came from the Cornwall mine and was shipped by rail to the Lebanon concentrator. The concentrator consists of four plants—mill, sinter, pellet, and flotation. Typical daily production, in tons, was ore 6,500, iron concentrate 3,600, copper concentrate 67, pyrite concentrate 79, sinter 1,600, pellets 1,300, and tailing 2,700. Cobalt also was obtained by treating the pyrite concentrate. The sinter and pellets were shipped to Steelton, Pa.; pyrite concentrate was shipped to Sparrows Point, Md.

Progress was made during the year in developing the Grace mine owned by Bethlehem-Cuba Iron Mines Co. and operated by Bethlehem Cornwall Corp. The mine, near Morgantown, Berks County, will be mined by panel caving; daily production was expected to reach 9,600 net tons.[4]

Initial development was confined primarily to 1 major job on each of 4 levels. Two shafts had been sunk—A, ore shaft to a depth of 2,208 feet, and B, man and material shaft to a depth of 3,079 feet. Initial development consisted of driving and concreting 6,000 feet of main haulage drift on the first level of A shaft, mining and constructing a power station on the second level, mining and concreting two main sumps for mine water on the third level, and mining and constructing a main pumproom on the fourth level.

Pig Iron and Ferrous Scrap.—Production of pig iron totaled 20,788,000 net tons—a 41-percent increase over 1954. A total of

[3] Oil and Gas Journal, Annual Review—Forecast Issue, vol. 54, No. 39, Jan. 30, 1956, pp. 146, 149, 151, 161, and 178.

[4] Bingham, J. P., Bethlehem Cornwall Corp. Grace Mine Development: AIME Mining Branch Conference, Hershey, Pa., Nov. 8-10, 1956.

38,858,179 net tons of metalliferous materials, 17,711,000 tons of coke, and 8,496,000 tons of flux was consumed in processing the pig iron. Metalliferous materials consumed per ton of pig iron produced in 1955 totaled 1.869, a slight increase over 1954.

Uninterrupted and accelerated steel production resulted in an increased demand for ferrous materials. Consumption of pig iron and ferrous scrap increased 43 percent compared with 1954; ferrous materials in greater quantity were used in all types of furnaces. Open-hearth furnaces, the leading consumers of both pig iron and ferrous scrap, consumed 88 percent of the entire pig-iron output and 76 percent of the scrap used.

TABLE 5.—Consumption of pig iron and ferrous scrap in 1954–55 by type of furnace, in short tons

Type of furnace and raw material	1954	1955	Type of furnace and raw material	1954	1955
Open-hearth furnaces:			Blast furnaces:		
Pig iron	12,925,526	18,071,822	Pig iron		
Scrap	9,430,661	13,929,937	Scrap	1,099,013	1,450,662
Total pig iron and scrap	22,356,187	32,001,759	Total pig iron and scrap	1,099,013	1,450,662
Bessemer converters:			Ferroalloy furnaces:		
Pig iron	529,889	671,189	Pig iron		
Scrap	84,721	125,837	Scrap	185	276
Total pig iron and scrap	614,610	797,026	Total pig iron and scrap	185	276
Electric steel furnaces:			Miscellaneous uses:		
Pig iron	13,299	20,503	Pig iron	[1] 805,782	[1] 1,456,223
Scrap	1,218,634	1,752,251	Scrap	[2] 54,338	[2] 85,242
Total pig iron and scrap	1,231,933	1,772,754	Total pig iron and scrap	860,120	1,541,465
Cupola furnaces:			Total Pennsylvania:		
Pig iron	286,471	328,134	Pig iron	14,601,423	20,600,273
Scrap	642,935	754,079	Scrap	12,639,748	18,249,389
Total pig iron and scrap	929,406	1,082,213	Total pig iron and scrap	27,241,171	38,849,662
Air furnaces:					
Pig iron	40,456	52,402			
Scrap	109,261	151,105			
Total pig iron and scrap	149,717	203,507			

[1] Includes direct castings and small quantity used in crucible furnaces.
[2] Includes small quantity used in crucible furnaces.

NONMETALS

Cement.—The cement industry shipped 48 million barrels valued at $142 million and set a new record, quantity increased 12 percent and value 20 percent over 1954. Portland cement represented 95 percent of the total quantity and 94 percent of the total value in 1955. Data for shipments of masonry cement from plants in Pennsylvania is given separately for the first time in 1955, showing a total of 2.6 million barrels valued at $9 million.

Cement plants produced in Allegheny, Berks, Butler, Lawrence, Lehigh, Montgomery, Northampton, and York Counties. The Lehigh and Northampton Counties area was the leading center of production; 16 plants supplied 68 percent of portland-cement shipments. Plants producing masonry cement were active in 1955 in Allegheny, Berks, Butler, Lawrence, Lehigh, Northampton, and York Counties. The Lehigh and Northampton area was the leading producing district; 13 companies produced masonry cement.

TABLE 6.—Finished portland cement produced, shipped, and in stock, 1946–50 (average) and 1951–55

Year	Active plants	Production (barrels)	Shipped from mills [1]			Stocks at mills on December 31 (barrels)
			Barrels	Value		
				Total	Average per barrel	
1946–50 (average)	24	35, 526, 261	35, 590, 801	$74, 074, 997	$2. 08	2, 431, 005
1951	24	41, 981, 431	41, 560. 431	107, 035. 506	2. 58	2, 980, 404
1952	24	39, 437, 971	40. 037, 761	103, 388. 586	2. 58	2. 390, 588
1953	24	42, 799, 409	42, 093, 765	114, 002, 846	2. 71	3. 096, 231
1954	24	42, 514, 803	43, 068, 234	117, 912, 299	2. 74	[2] 2, 539, 940
1955	24	46, 862, 575	45, 526, 877	132, 965, 136	2. 92	3, 442, 601

[1] For years previous to 1955, includes portland cement used in making masonry cement.
[2] Revised figure.

TABLE 7.—Shipments of portland cement, 1954–55, by counties

County	1954		1955	
	Barrels [1]	Value	Barrels	Value
Northampton	22, 485, 987	$61, 507, 393	22, 874, 741	$66, 864, 557
Lehigh	7, 712, 313	20, 519, 985	8, 005, 405	23, 098, 410
Allegheny, Lawrence, Butler	8, 561, 019	23, 146, 906	9, 664, 645	27, 301, 954
Berks, Montgomery, York	4, 308, 915	12, 738, 015	4, 982, 086	15, 700, 215
Total	43, 068, 234	117, 912, 299	45, 526, 877	132, 965, 136

[1] Includes portland cement used in making masonry cement.

Clays.—For the first time since 1951, production of clays in Pennsylvania increased, rising 14 percent in tonnage over 1954. This increase was due to the expanding production of fire clay and miscellaneous clay, which compensated for the decrease from 1953 to 1954. In 1955 Pennsylvania ranked second in tonnage of clay and third in value, representing 8 percent of the United States tonnage and 9 percent of the total value. Fire clay was the most important clay produced in 1955 in Pennsylvania, representing 54 percent of tonnage and 83 percent of total value.

Fire clay was used principally in manufacturing firebrick and block and heavy clay products; smaller quantities were used in producing other refractories and art pottery. Miscellaneous clay was used mostly in producing heavy clay products; smaller quantities were used in manufacturing portland cement, art pottery, refractories, linoleum and oilcloth, and tile and as a filler in paints. Kaolin was used in producing portland cement and firebrick and block; its use in producing cements was more important.

TABLE 8.—Clays sold or used by producers, 1946–50 (average), and 1951–55

Year	Kaolin		Fire clay		Miscellaneous clay		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1946–50 (average)	48,160	$182,574	1,708,899	$6,536,729	1,625,063	$1,340,255	3,382,122	$8,059,558
1951	75,415	306,045	2,205,794	11,653,734	1,949,358	2,127,771	4,230,567	14,087,550
1952	(1)	(1)	[1] 1,992,099	[1] 10,726,085	1,739,031	1,913,779	3,731,130	12,639,864
1953	(1)	(1)	[1] 1,703,280	[1] 8,001,196	1,872,142	1,986,937	3,575,422	9,988,138
1954	(1)	(1)	[1] 1,901,644	[1] 8,602,399	1,622,754	1,641,086	3,524,398	10,243,485
1955	38,823	211,230	2,160,465	10,300,454	1,820,621	1,901,409	4,019,909	12,413,093

[1] To avoid disclosing individual company confidential data, kaolin has been combined with fire clay.

TABLE 9.—Clays sold or used by producers in 1954–55, by kinds and uses, in short tons

Uses	Fire clay		Miscellaneous clay	
	1954	1955	1954	1955
Refractories:				
Firebrick and block [1]	[2] 858,165	958,026	1,938	----
Fire clay mortar	29,744	29,811	----	----
Foundries and steelwork	91,426	118,086	(3)	(3)
Kaolin	(4)	38,823	----	----
Miscellaneous refractories	64,159	139,604	----	----
Heavy clay products	826,231	902,563	1,438,936	1,503,611
Paint fillers or extenders	----	----	434	380
Cement	----	----	155,363	170,478
Lightweight aggregate	----	----	----	117,308
Undistributed	[5] 31,919	[5] 12,375	[6] 26,083	[6] 28,844
Total	1,901,644	2,199,288	1,622,754	1,820,621

[1] Includes high-alumina brick.
[2] Includes kaolin.
[3] Included with "Undistributed" to avoid disclosing individual company confidential data.
[4] Included with firebrick and block to avoid disclosing individual company confidential data.
[5] Includes kaolin and fire clays for art pottery and stoneware, high-alumina brick, and glass refractories.
[6] Includes miscellaneous clays for art pottery and stoneware, high-grade tile, foundries and steelwork, miscellaneous fillers, linoleum and oilcloth, and other uses.

TABLE 10.—Clays sold or used by producers in 1955, by counties

County	Short tons	Value	Types of clay
Adams	64, 400	$32, 900	Miscellaneous clay.
Allegheny	139, 420	270, 200	Do.
Armstrong	231, 235	912, 787	Fire clay, miscellaneous clay.
Beaver	551, 218	1, 809, 823	Fire clay.
Blair	27, 123	132, 227	Do.
Butler	19, 991	48, 101	Do.
Cambria	51, 833	148, 973	Do.
Carbon	117, 308	19, 596	Miscellaneous clay.
Chester	65, 520	81, 863	Do.
Clarion	109, 496	435, 629	Fire clay.
Clearfield	550, 127	3, 321, 921	Do.
Clinton	56, 856	317, 555	Do.
Columbia	15, 124	13, 977	Miscellaneous clay.
Cumberland	29, 521	176, 230	Kaolin.
Fayette	143, 113	908, 572	Fire clay.
Greene	4, 588	5, 735	Miscellaneous clay.
Indiana	34, 336	120, 176	Fire clay.
Luzerne	48, 879	39, 103	Miscellaneous clay.
Lycoming	380	760	Do.
Montgomery	72, 757	151, 018	Fire clay.
Washington	53, 497	70, 997	Miscellaneous clay.
Westmoreland	34, 872	75, 508	Fire clay.
Undistributed [1]	1, 598, 315	3, 319, 442	
Total	4, 019, 909	12, 413, 093	

[1] Includes Berks, Bucks, Centre, Dauphin, Delaware, Elk, Huntingdon, Jefferson, Lancaster, Lawrence, McKean, Northumberland, Schuylkill, Snyder, Somerset, and York Counties, and a quantity unspecified by county.

Lime.—Output of lime in 1955 increased in both tonnage and value compared with 1954, owing mainly to increased demand for lime in chemical and industrial applications. Lime was produced in 16 counties; output in Centre, Lebanon, York, and Chester each totaled more than 100,000 short tons. Chemical, industrial, and refractory uses gained substantially; sales of both agricultural and building lime declined. Of the total sold or used, 78 percent was in the form of quicklime and dead-burned dolomite and 22 percent in hydrated form.

Mica.—Output of mica continued to increase in 1955. The General Mining Associates, a plant in York County, sole producer, marketed mica for use in paints, rubber, electrical insulators, and welding rods.

Pyrite.—Output of pyrite increased in 1955 in production and value compared with 1954. Bethlehem Steel Co. produced pyrite as a byproduct of the iron-mining operations at Cornwall, Lebanon County.

Pyrophyllite (Sericite Schist).—Mine production of sericite schist increased greatly in tonnage and value compared with 1954. Output came from the Summit Mining Corp. open-pit mine in Adams County. In a new plant completed June 1955, the company processed crude material for use in insecticides, asphalt, and filler in joint-filler cement.

Sand and Gravel.—Sand and gravel decreased 6 percent in quantity sold or used.

Total value decreased only slightly in 1955. Sand was sold for ten major uses. Building sand, fire or furnace sand, and sand for miscellaneous uses increased in quantity sold or used; sand for glass, molding, paving, engine, and filter decreased; sand for grinding, polishing, and blast remained approximately the same as for 1954. Gravel was used for four applications; consumption of building, railroad ballast and miscellaneous gravel increased in tonnage. Value of commercial sand production increased over 1954; value of gravel

TABLE 11.—Lime sold by producers, 1946–50 (average) and 1951–55 by uses

Year	Agricultural		Building		Chemical and industrial		Refractory		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1946–50 (average)	139, 921	$1, 438, 473	101, 434	$1, 348, 465	[1] 778, 886	[1] $7, 674, 552			1, 020, 241	$10, 461, 490
1951	134, 559	1, 532, 813	126, 048	1, 740, 850	741, 673	8, 551, 011	178, 820	$2, 435, 380	1, 181, 100	14, 260, 054
1952	131, 007	1, 463, 596	123, 049	1, 675, 987	768, 319	8, 228, 875	180, 606	2, 473, 755	1, 202, 981	13, 842, 213
1953	116, 863	1, 367, 594	114, 839	1, 575, 387	865, 747	9, 766, 852	237, 851	3, 300, 281	1, 335, 300	16, 010, 114
1954	129, 146	1, 537, 849	120, 661	1, 697, 895	816, 044	9, 753, 519	15, 732	217, 047	1, 081, 583	13, 206, 310
1955	118, 274	1, 430, 454	118, 727	1, 529, 627	1, 083, 043	13, 178, 613	104, 007	1, 493, 101	1, 424, 051	17, 631, 795

[1] Refractory lime included with chemical and industrial.

TABLE 12.—Lime sold or used by producers, 1954–55, by counties

County	1954		1955	
	Short tons	Value	Short tons	Value
Armstrong	1,159	$15,124	788	$8,846
Bedford	(1)	(1)	3,991	57,170
Centre	487,735	5,573,465	(1)	(1)
Franklin	(1)	(1)	2,513	21,987
Lebanon	194,664	2,040,179	244,111	2,749,585
Lycoming	(1)	(1)	800	6,400
Mifflin	5,565	47,000	(1)	(1)
Montgomery	72,661	1,139,504	74,079	1,150,083
Northumberland	(1)	(1)	550	4,276
Snyder	3,360	21,949	2,593	18,593
Somerset	1,321	5,284	1,563	9,378
Undistributed [2]	315,118	4,363,805	1,093,063	13,605,477
Total	1,081,583	13,206,310	1,424,051	17,631,795

[1] Included with "Undistributed" to avoid disclosing individual company confidential data.
[2] Includes tonnage and value for counties that must be concealed as indicated by footnote 1 and the following counties: Butler, Chester, Fulton (1954), Lancaster, Montour (1954), and York.

TABLE 13.—Sand and gravel sold or used by producers, 1954–55, by uses

Use	1954		1955	
	Short tons	Value	Short tons	Value
COMMERCIAL OPERATIONS				
Sand:				
Molding and fire or furnace	439,741	$982,139	521,044	$1,233,081
Building	3,598,674	4,715,867	3,823,809	5,094,580
Paving	2,151,463	2,852,955	2,073,476	2,850,744
Engine	168,584	398,243	127,148	302,837
Filter	(1)	(1)	420	1,260
Other [2]	958,522	3,086,096	1,001,339	3,111,164
Total commercial sand	7,316,984	12,035,300	7,547,236	12,593,666
Gravel:				
Building	3,512,042	4,870,243	3,659,166	5,093,197
Paving	2,507,562	3,433,275	1,823,028	2,529,653
Railroad ballast	(1)	(1)	79,988	51,981
Other	64,655	85,378	131,663	200,942
Total commercial gravel	6,084,259	8,388,896	5,693,845	7,875,773
Total commercial sand and gravel	13,401,243	20,424,196	13,241,081	20,469,439
GOVERNMENT-AND-CONTRACTOR OPERATIONS				
Gravel: Paving	552,193	100,364	71,890	42,408
Other	[3] 265,008	[3] 71,430		
Total Government-and-contractor sand and gravel	817,201	171,794	71,890	42,408
Grand total	14,218,444	20,595,990	13,312,971	20,511,847

[1] Included with "Other" to avoid disclosing individual company confidential data.
[2] Includes grinding and polishing, blast, glass, other uses, and ground sand.
[3] Includes building gravel, paving sand, and a portion of paving gravel, to avoid disclosing individual company confidential data.

decreased. Government-and-contractor production of sand and gravel decreased considerably compared with the preceding year. In 1954 both sand and gravel were produced for use by Government agencies; in 1955 only gravel was produced, mainly for use as paving material. Commercial production of sand and gravel was reported in 40 counties. Bucks, Lycoming, and Westmoreland Counties were

the chief producing areas for commercial sand and gravel. Sand and gravel for use by Government agencies was produced in both Huntingdon and Mercer Counties.

TABLE 14.—Sand and gravel sold or used by producers, 1954–55, by counties

County	1954		1955	
	Short tons	Value	Short tons	Value
Beaver	981, 212	$1, 170, 481	472, 848	$699, 133
Bedford	(1)	(1)	9, 644	22, 953
Bucks	5, 305, 524	8, 103, 521	5, 173, 952	7, 529, 929
Butler			104, 987	138, 982
Carbon	336, 780	476, 048	267, 971	392, 907
Crawford	224. 929	181. 507	117, 249	126, 768
Dauphin	513, 868	154, 401	97, 192	95, 032
Elk			40, 235	24, 338
Erie	232, 826	251, 927	172, 070	208, 769
Fayette	(1)	(1)	260, 000	656, 000
Forest	(1)	(1)	61, 035	79, 805
Franklin	(1)	(1)	153, 955	224. 390
Luzerne	392, 347	438, 969	362, 561	428, 530
Lycoming	(1)	(1)	833, 023	608. 260
Mercer	(1)	(1)	223, 973	360, 864
Monroe	(1)	(1)	38, 512	54, 433
Montgomery	(1)	(1)	10, 000	25, 060
Northampton	(1)	(1)	281, 173	336, 157
Philadelphia	(1)	(1)	599, 200	339, 747
Schuylkill	(1)	(1)	165, 723	382, 538
Somerset	(1)	(1)	2, 292	6, 694
York	(1)	(1)	65, 561	104, 689
Undistributed [2]	6, 230, 958	9, 819, 136	3, 799, 815	7, 665, 869
Total	14, 218, 444	20, 595, 990	13, 312, 971	20, 511, 847

[1] Included with "Undistributed" to avoid disclosing individual company confidential data.
[2] Includes tonnage and value for counties that must be concealed as indicated by footnote 1 and the following counties: Allegheny, Armstrong, Bedford, Berks, Blair, Bradford, Cameron (1954), Clearfield, Columbia, Cumberland, Huntingdon, Lancaster, Lawrence, McKean, Mifflin, Montour (1954), Northumberland, Pike (1954), Venango, Warren, Wayne, Westmoreland (1955), and Wyoming.

Slate.—The Pennsylvania slate industry continued to decline in quantity of products sold, but increased slightly in value. Larger quantities of slate were marketed as flagging, grave vaults, and electrical slate than in 1954. Sales of slate for use as flour granules, roofing, blackboards, billiard-table tops, and school slates and in structural and sanitary applications, all decreased, compared with 1954. Quarries were operated in Lehigh, Northampton, and York Counties; Northampton County furnished 75 percent of production value in 1955. Of the 17 operators active in producing slate in 1955, 15 were in Northampton County, 1 in Lehigh, and 1 in York.

TABLE 15.—Slate sold by producers, 1946–50 (average) and 1951–55, by uses

Year	Number of operators	Roofing		Millstock		Other uses (value)	Total value
		Squares (100 square feet)	Value	Square feet	Value		
1946–50 (average)	24	123, 796	$2, 140, 351	2, 266, 370	$1, 111, 104	$1, 346, 896	$4, 598, 351
1951	25	134, 180	2, 681, 072	2, 589, 090	1, 416. 657	1, 591, 141	5, 688, 870
1952	18	93, 200	1, 866, 479	2, 078, 020	1, 227, 471	1, 393, 698	4, 487, 648
1953	18	86, 116	1, 688, 167	2, 363, 266	1, 452, 320	1, 279, 125	4, 419, 612
1954	17	77, 819	1, 487, 870	2, 505, 839	1, 616, 981	1, 314, 588	4, 419, 439
1955	17	72, 638	1, 458, 594	2, 495, 467	1, 722, 889	1, 239, 815	4, 421, 298

Stone.—Production of stone increased 10 percent in tonnage and 14 percent in value compared with 1954. Sandstone, granite, basalt, limestone, and miscellaneous stone were produced in 45 of the 67 counties. Of the total value, sandstone reprcsented 6, basalt 10, and limestone 84 percent.

Sandstone was marketed as both dimension and crushed stone. Dimension sandstone was prepared as rough construction, rubble, rough architectural, dressed stone, and flagging. Crushed sandstone was used as riprap, road material, and railroad ballast. The ganister was used by refractory plants in the State in manufacturing silica brick and furnace or converter linings.

Only dimension granite was produced; it was utilized mainly as dressed monumental stone and as building stone in rough construction.

Dimension basalt was produced from quarries in Chester and Montgomery Counties. Crushed basalt from Berks, Bucks, Chester, Delaware, and Montgomery Counties was used principally as road material and railroad ballast.

Output of dimension limestone in Bucks, Chester, Lancaster, and Somerset Counties was utilized for rough construction and rubble. Crushed limestone, employed as riprap, fluxing agent, concrete aggregate, and railroad ballast and for agricultural purposes, was produced in 35 counties. Government-and-contractor limestone was produced in Lycoming County for use as road material.

Quantities of dimension and crushed miscellaneous stones were used as building, flagging, and road materials.

Sulfur.—Output of byproduct sulfur decreased both in quantity and value compared with 1954. The Sinclair Refining Co. Marcus Hook refinery in Delaware County, only sulfur plant in Pennsylvania, produced brimstone by the Claus process.

TABLE 16.—Stone sold or used by producers, 1954–55, by uses

Use	1954		1955	
	Short tons	Value	Short tons	Value
Dimension stone:				
Building stone	153,774	$798,270	224,232	$912,635
Monumental stone	[1]	[1]	378	55,325
Curbing and flagging	5,496	122,902	13,711	292,859
Total dimension stone	[2] 159,270	[2] 921,172	238,321	1,260,819
Crushed and broken stone:				
Riprap	[1]	[1]	85,752	144,754
Crushed stone	16,544,373	23,924,243	15,575,172	23,314,077
Furnace flux (limestone)	6,483,488	10,857,065	9,950,775	16,714,426
Refractory	496,848	2,247,516	334,908	2,019,891
Agricultural	887,684	2,787,111	712,029	2,300,887
Other uses	15,945,210	20,430,392	17,540,666	24,301,226
Total crushed and broken stone	40,357,603	60,246,327	44,199,302	68,795,261
Undistributed	4,883	25,920		
Grand total	40,521,756	61,193,419	44,437,623	70,056,080

[1] Included with "Undistributed" to avoid disclosing individual company confidential data.
[2] To avoid disclosing confidential information, certain totals are incomplete.

TABLE 17.—Stone sold or used, 1954–55, by counties

County	1954		1955	
	Short tons	Value	Short tons	Value
Allegheny	2,384	$16,687	(1)	(1)
Bedford	(1)	(1)	23,865	$62,390
Berks	2,696,525	2,675,091	2,414,747	3,146,268
Blair	739,439	1,380,314	536,805	1,068,855
Bucks	596,794	1,159,742	697,483	1,269,313
Butler	(1)	(1)	2,452,797	4,443,739
Cambria			5,000	13,750
Centre	1,740,967	3,139,442	2,223,352	3,786,956
Chester	1,881,649	2,651,785	1,389,214	2,171,530
Clinton	200,661	283,625	151,958	213,492
Cumberland	(1)	(1)	531,810	914,671
Dauphin	1,001,069	1,620,432	1,342,482	2,149,426
Delaware	751,939	1,195,829	(1)	(1)
Fayette	(1)	(1)	324,181	769,751
Franklin	507,778	782,062	380,997	605,035
Fulton	(1)	(1)	65,428	85,924
Huntingdon	422,953	1,249,564	349,045	1,304,607
Indiana	3,174	13,954	2,200	9,900
Juniata	117,394	157,563	89,616	286,502
Lancaster	1,447,783	2,404,485	1,717,028	2,747,208
Lawrence	2,865,643	4,489,297	3,273,959	5,338,034
Lebanon	2,120,169	3,504,360	2,445,651	3,859,376
Lehigh	2,424,223	2,377,604	2,760,563	3,014,849
Lycoming	339,272	585,135	315,936	558,830
Mifflin	708,959	1,011,575	(1)	(1)
Montgomery	3,310,373	5,315,096	5,168,336	8,219,101
Montour	(1)	(1)	393,350	536,821
Northampton	7,092,538	7,032,948	6,880,654	6,891,767
Northumberland	114,000	201,650	(1)	(1)
Perry	72,118	114,668	17,917	32,447
Potter	(1)	(1)	7,438	171,761
Schuylkill	23,553	167,848	11,376	17,064
Snyder	82,488	181,511	79,703	131,866
Susquehanna	88,832	227,988	3,414	59,238
Union	205,400	358,100	181,900	308,650
Washington			4,884	34,150
Wayne			116,515	186,424
York	2,156,892	3,822,708	2,348,211	4,159,418
Undistributed [2]	6,806,787	13,072,356	5,729,808	11,486,967
Total	40,521,756	61,193,419	44,437,623	70,056,080

[1] Included with "Undistributed" to avoid disclosing individual company confidential data.
[2] Includes tonnage and value for counties as indicated by footnote 1 and the following counties: Adams, Armstrong, Greene (1954), Lackawanna (1954), Luzerne, Mercer, Monroe, Philadelphia (1955), Somerset, and Westmoreland.

Tripoli.—Tripoli (rottenstone) was the only abrasive material produced in Pennsylvania in 1955. Rottenstone produced by one company from mines in Lycoming County, increased in both tonnage and value. It was marketed as an abrasive for buffing compounds, metal polishes, cleansing compounds, and fillers.

REVIEW BY COUNTIES

Adams.—Bethlehem Limestone Co., formerly known as Bethlehem Quarry Co., quarry and crusher near Hanover produced limestone for use as blast-furnace flux, road material, railroad ballast, soil conditioner, and stone sand. A quantity of the crushed limestone was sold under contract to Government agencies. The Funkhouser Co. produced roofing granules and stone flour from an open quarry and underground mine at Charmian.

The Summit Mining Corp. open-pit mine near Bendersville produced sericite schist for use as asphalt filler, insecticides, and filler in joint-filler cement. This company completed constructing its grind-

ing plant in June 1955 and claimed to be the first operator of a Hardinge disc mill in the States.

Alwine Brick Co., New Oxford, and Gettysburg Drain Tile Works, Gettysburg, produced miscellaneous clay for making heavy clay products at open-pit mines.

Allegheny.—Ten leading producers of bituminous coal in Allegheny County in 1955 were: Harmar Coal Co., Republic Steel Corp., Renton Coal Co., Pittsburgh Coal Co., Duquesne Light Co., Allegheny Pittsburgh Coal Co., Greensburg-Connellsville Coal & Coke, Butler Consolidated Coal Co., William Aloe Coal Co., and Charles E. Campbell. Bituminous coal was produced from both underground and strip mines.

Pittsburgh Coke & Chemical Co., Green Bag Cement Division, at a cement plant at Neville Island produced types I and II (general-use and moderate-heat), portland-pozzolan and waterproof-portland cement and a quantity of masonry cement. The cement was produced by the wet process. The Universal Atlas Cement Co., subsidiary of United States Steel Corp., cement plant at Universal produced air-entrained and non-air-entrained types I-II and portland slag, non-air-entrained type III (high-early strength), and Atlas Mortar cement. All the cement was produced by the dry process.

Sand & Gravel, Inc., Pittsburgh, and Dravo Corp., Keystone Division, Coraopolis, produced and sold washed sand and gravel from dredges for construction and paving uses. Molding sand was produced by James H. McCrady, Jr., Cheswick, and Sidwell Loam Sand Co., Pittsburgh. A quantity of building sand and gravel was produced under contract for Pittsburgh & Lake Erie Railroad from deposits in Allegheny County.

Six companies produced miscellaneous clay from open-pit mines for use in manufacturing heavy clay products, including building brick and tile, paving brick, drain tile and sewer pipe. The active companies in 1955 were: Milliken Brick Co., Inc., Wilkinsburg; Van Ormer Brick Co., Inc., Pitcairn; Glassmere Brick & Tile Co. and McFetridge Building Brick Co., Creighton; Bridgeville Brick Co., Bridgeville; and M. Lanz Brick & Tile Co., Pittsburgh.

Francis Matesia recovered dimension sandstone for use in building retaining walls from a quarry near Bridgeville.

Pennsylvania Salt Manufacturing Co. at a mine near Natrona produced and marketed crude iron oxide pigments of the Vandyke brown variety for use as paint pigments.

Panacalite Perlite Co., Pittsburgh, expanded perlite from crude material mined in western United States, for use in manufacturing lightweight plaster aggregate. Perlite Manufacturing Co., Carnegie, also expanded perlite for plaster aggregate, concrete aggregate, and industrial and miscellaneous uses.

Armstrong.—Ten of the leading bituminous-coal producers in Armstrong County were: Maral Co., Mech Mining Co., Allegany River Mining Co., Leechburg Mining Co., Joe F. Sherman Co., Kittanning Brick Co., Harl E. Bowser, J. Russell Cavener, Powell Coal Co., and Taylor Bros. Bituminous coal mined in Armstrong County was produced by underground, strip, and auger methods.

TABLE 18.—Value of mineral production in Pennsylvania, 1954–55, by counties [1] [2]

County	1954	1955	Minerals produced in 1955 in order of value
Adams	(3)	(3)	Stone, sericite schist, clays.
Allegheny	$47,237,526	$58,081,078	Coal, cement, sand and gravel, clays, stone, crude iron oxide pigments.
Armstrong	12,887,775	10,197,169	Coal, stone, clays, sand and gravel, lime.
Beaver	4,127,840	4,225,167	Clays, coal, sand and gravel.
Bedford	(3)	551,195	Coal, stone, lime, sand and gravel.
Berks	8,338,143	8,913,688	Cement, stone, oystershell, coal, clays, sand and gravel.
Blair	2,243,120	2,143,001	Stone, coal, clays, sand and gravel.
Bradford	(3)	(3)	Sand and gravel, coal.
Bucks	9,283,263	8,821,242	Sand and gravel, stone, clays.
Butler	12,402,225	15,737,558	Coal, cement, stone, lime, sand and gravel, clays.
Cambria	54,433,637	63,592,999	Coal, clays, stone, crude iron oxide pigments.
Cameron	(3)	335,560	Coal.
Carbon	12,058,552	14,576,629	Coal, sand and gravel, clays.
Centre	10,371,114	14,266,587	Lime, coal, stone, clays.
Chester	3,956,879	3,439,493	Stone, lime, clays.
Clarion	6,884,248	8,578,848	Coal, clays.
Clearfield	(3)	(3)	Coal, clays, sand and gravel.
Clinton	2,796,862	2,635,528	Coal, clays, stone.
Columbia	(3)	6,648,621	Coal, sand and gravel, clays.
Crawford	181,507	126,768	Sand and gravel.
Cumberland	(3)	(3)	Stone, sand and gravel.
Dauphin	[4] 1,949,554	[4] 3,038,855	Stone, coal, sand and gravel, clays, lime.
Delaware	1,498,374	(3)	Stone, sulfur, clays.
Elk	(3)	(3)	Coal, clays, sand and gravel.
Erie	(3)	(3)	Sand and gravel, peat.
Fayette	41,568,911	41,341,340	Coal, clays, stone, sand and gravel.
Forest	(3)	79,805	Sand and gravel.
Franklin	871,121	844,648	Stone, sand and gravel, lime.
Fulton	(3)	(3)	Coal, stone.
Greene	(3)	65,628,367	Coal, clays.
Huntingdon	4,503,817	4,315,318	Sand and gravel, stone, coal, clays.
Indiana	(3)	28,480,723	Coal, clays, stone.
Jefferson	(3)	(3)	Coal, clays.
Juniata	157,563	286,502	Stone.
Lackawanna	(3)	22,017,503	Coal.
Lancaster	3,839,258	5,323,416	Stone, lime, coal, sand and gravel, clays.
Lawrence	[5] 14,381,946	17,474,987	Cement, stone, coal, clays, sand and gravel, peat.
Lebanon	16,548,941	20,917,678	Iron ore, copper, lime, stone, cobalt, pyrites, gold, silver, coal.
Lehigh	21,016,605	26,604,947	Cement, stone, oystershell, slate.
Luzerne	98,487,838	87,818,001	Coal, stone, sand and gravel, peat, clays.
Lycoming	1,379,065	1,428,150	Sand and gravel, stone, coal, tripoli, lime, clays.
McKean	(3)	599,095	Coal, clays, sand and gravel.
Mercer	(3)	2,859,077	Coal, sand and gravel, stone, peat.
Mifflin	1,949,753	(3)	Stone, sand and gravel, lime.
Monroe	(3)	(3)	Stone, sand and gravel.
Montgomery	9,282,824	14,501,384	Stone, cement, lime, clays, sand and gravel.
Montour	(3)	536,821	Stone.
Northampton	65,782,967	73,568,907	Cement, slate, stone, sand and gravel, coal.
Northumberland	30,730,257	21,418,663	Coal, stone, clays, lime, sand and gravel.
Perry	114,668	32,447	Stone.
Philadelphia	(3)	368,747	Sand and gravel, oystershell.
Pike	(3)		
Potter	(3)	171,761	Stone.
Schuylkill	69,458,677	53,565,714	Coal, sand and gravel, clays, stone.
Snyder	348,321	262,133	Stone, coal, clays, lime.
Somerset	12,584,984	15,326,200	Coal, stone, clays, lime, sand and gravel.
Sullivan	132,841	63,426	Coal.
Susquehanna	227,988	59,238	Stone.
Tioga	354,608	421,032	Coal.
Union	358,100	308,650	Stone.
Venango	(3)	(3)	Coal, sand and gravel.
Warren	(3)	(3)	Sand and gravel.
Washington	78,505,987	94,690,663	Coal, clays, stone.
Wayne	(3)	(3)	Stone, sand and gravel.
Westmoreland	16,164,974	20,377,543	Coal, sand and gravel, stone, clays.
Wyoming	(3)	(3)	Sand and gravel.
York	9,403,485	11,201,555	Cement, stone, lime, slate, sand and gravel, clays, mica.
Undistributed	236,738,741	112,259,690	
Total	925,545,000	971,064,000	

[1] Excludes value of production for LP-gases, natural gas, natural gasoline, and petroleum by counties, but value is included with "Undistributed."

[2] Excludes value of clays and stone used in the manufacture of lime and cement.

[3] Figure withheld to avoid disclosing individual company confidential data; included with "Undistributed."

[4] Excludes value of lime which is included in Lebanon County.

[5] Revised figure.

The Kaylor underground mine near East Brady, operated by Michigan Limestone Division, United States Steel Corp., yielded limestone for use as flux, road material, agricultural purposes, and cement production. A small quantity was sold to Government agencies as highway material. The C. D. McCanna, Kittanning underground mine and the Craig Claypool, Manor Township, open quarry produced limestone to be crushed for use in manufacturing lime.

Worthington Ceramics Co., Worthington, sold the entire output of plastic fire clay from an open-pit mine for making heavy clay products. Continental Clay Products Co., Kittanning, reported production of plastic fire clay from an underground mine for use in manufacturing heavy clay products and sold a small quantity for mortar. Kittanning Refractories, Inc. and Haws Refractories Co. (Kittanning) Kittanning Brick Co. (Adrian), Freeport Brick Co. (Freeport), Harbison-Walker Refractories Co. (Pittsburgh) and Graff-Kittanning Clay Prod. Co. (Worthington) produced plastic fire clay used in manufacturing heavy clay products and refractory firebrick and block.

Allegheny Sand & Loam Co., Leechburg recovered unwashed sand, usable as fire or furnace sand. Glacial Sand & Gravel Co., Cowansville, produced and prepared sand and gravel for construction and paving uses and a quantity of gravel for railroad ballast. Lee Don, Inc., Harmarville, produced sand and gravel for paving use.

Craig Claypool, C. D. McCanna Lime Plant, and Walter Hershberger, all near Kittanning, produced and marketed hydrated lime for use in agriculture.

Beaver.—Thirteen companies produced clay in Beaver County in 1955. Eastvale Clay Products Co., Beaver Falls, used a large quantity of plastic fire clay from an underground mine for manufacturing heavy clay products and sold a small quantity for manufacturing refractories for the glass and steel industries. New Brighton Clay Products Co. used miscellaneous clay from an open-pit mine near New Brighton for heavy clay products. The Negley Fire Clay Co. (New Galilee), Pen-Hio Clay Co. (Cannelton), Sunnyside Coal Mining Co. (Darlington), Davis Coal Co. (Beaver County, west of Negley, Ohio), and Ralph A. Veon, Inc. (Darlington and New Galilee) mined fire clay of the plastic variety from open pits and marketed the output for use in manufacturing fire brick and block, foundries, and heavy clay products. In addition, Ralph A. Veon, Inc., mined and sold fire clay of the burley variety. Friedl-Elverson Pottery Co., New Brighton, produced miscellaneous and fire clays from an open pit for use in manufacturing art pottery, flowerpots, and glaze slip. Fire clay of the plastic variety mined by Metropolitan Brick, Inc., from an open pit near Darlington and from underground mines by Standard Clay Mfg. Co. (Fallston), McLain Fire Brick Co. (Division of H. K. Porter Co., Inc., Beaver), and Colonial Clay Products Co. (West Bridgewater) was used mainly for producing heavy clay products and refractories. New Castle Refractories mined stoneware clay from an underground mine near New Galilee for use locally in manufacturing pouring channels.

Ten leading producers of bituminous coal in Beaver County were: Sunnyside Coal Mining Co., Colonial Gas Coal Co., Tasa Coal Co.,

North Sewickley Coal Co., West Freedom Mining Co., Dow-Lin Coal Co., Keystone Valley Coal Co., C. J. Lundy, Courtney Coal Co., and The Negley Fire Clay Co. Bituminous coal produced in this county was mined from underground, strip, and auger mines.

Structural sand and gravel output was reported by Beaver Sand Co., Beaver. Shippingport Sand & Gravel Co., produced structural and paving sand and gravel from a dredge near Shippingport. Ellwood Stone Co., Ellwood City, prepared sand for grinding and polishing, blast sand, fire or furnace, and engine sand.

Bedford.—The quantity and value of minerals in Bedford County decreased, compared with 1954. Bituminous coal, stone, lime, and sand and gravel were produced.

Ten leading producers of bituminous coal were: Rockhill Coal Co., C. E. Clark Contracting Co., Martin, McIntyre & McKnight, Tenley Co., Duvall & White Coal Co., Colledge Coal Co., Ark Coal Co., Harriett Coal Co., O. J. Shaw, and L. D. L. Coal Co. Bituminous coal was mined from underground and strip mines in Bedford County.

Output of limestone from Gravel Pit Kilns quarry near Hyndman, operated by J. Mason Kerr, was utilized for burnt lime. Leap Ganister Rock Co. produced ganister rock for various uses from an open quarry near Madley.

New Enterprise Stone & Lime Co., Inc., produced and sold hydrated lime for agricultural use and for use in manufacturing silica brick at its Anschom plant, New Enterprise. Gravel Pit Kilns quarry near Hyndman also produced and sold quicklime for agricultural purposes.

Feight Bros., Everett, produced and sold building sand.

Berks.—Allentown Portland Cement Co. at its Evansville and Oley quarries produced cement rock and crushed limestone for use at its Evansville plant for manufacturing portland and masonry cement.

Berks Products Corp., Reading, crushed limestone for use as road material and railroad ballast; E. J. Breneman, Inc., Sinking Spring, crushed limestone for road material. Both companies sold crushed limestone to Government agencies. At the Hinterleiter quarry near Kutztown, Eastern Lime Corp. crushed limestone for paving and agricultural purposes. Diabase traprock (for use as riprap, road material, and railroad ballast) was quarried by John T. Dyer Quarry Co. at Monocacy and Birdsboro. Stowe Trap Rock Co., Douglasville, produced basalt for use as road material and railroad ballast and also supplied Government agencies under contract.

Glen-Gery Shale Brick Corp., Wyomissing and Shoemakersville, produced miscellaneous clay from open-pit mines for use in manufacturing heavy clay products.

John H. Gring produced building sand and gravel and paving gravel from a pit and fixed plant near Sinking Spring; Schildt Bros., Temple, produced building sand and gravel.

Reading Poultry Food Co. at Reading crushed oystershell for use as mineral food and poultry grit.

A small tonnage of anthracite was produced from dredge operations.

Blair.—Limestone, used mainly for road material, was mined from quarries operated by Chimney Rocks Lime & Stone Co., Hollidaysburg; Eldorado Stone Co., Altoona; and New Enterprise Stone & Lime Co., Inc., Roaring Spring and Hollidaysburg. A small quantity of limestone was marketed for producing lime and to nearby Govern-

ment agencies for road material. Sproul Lime & Stone Co. crushed limestone from a quarry at Claysburg for agricultural use. Basalt Trap Rock Co. (Williamsburg), General Refractories Co. (Claysburg), and J. L. Hartman Co. (Sproul) produced quartzite for use in making silica brick and as railroad ballast and a small quantity of riprap.

In Blair County, 5 companies produced bituminous coal; 2 companies working underground mines were Argyle Coal Co. and Stone Bridge Coal Co.; 3 companies operating strip mines were Cavalier Coal Co., Inc., Lawrence Sherbine, and Burkhart Coal Co.

Harbison-Walker Refractories Co. produced plastic fire clay from an open pit near Oreminea for use in manufacturing firebrick and block; Woodbury Clay Co., Williamsburg, sold plastic fire clay for mortar. Grannas Bros. sold kaolin from the No. 1 mine near Williamsburg for use in producing firebrick and block.

Structural sand was recovered from pits by Frankstown Sand Supply, Frankstown, and George G. Trude, Hollidaysburg.

Bradford.—Karl B. Shiner, Towanda, produced paving sand and gravel and a quantity of gravel for miscellaneous uses.

Paul Percival, the only producer of bituminous coal in Bradford County, reported a small tonnage from a strip mine.

Bucks.—Bucks County continued to lead in sand and gravel production in the State, but output decreased in quantity and value compared with 1954. Other minerals produced were stone and clays.

Building and paving sand and gravel was produced by Durnan & Good, Upper Black Eddy; Amico Sand & Gravel Co., Fallsington; Warner Co., Van Sciver and Dredge Franklin plants, Tullytown; and Amico Sand & Gravel Co., Tullytown (formerly Tullytown Sand & Gravel Co.). Amico Sand & Gravel Co. marketed its entire production. At their respective pits and fixed plants near New Hope, A. L. Lewis and Silvi Sand & Gravel Co., Tullytown, which sold its entire output, processed building sand and gravel. Unwashed molding sand was recovered from a bank by Brennan Sand Co., Tullytown; Riegelsville Sand & Gravel Co., Riegelsville, recovered paving sand and gravel.

Bituminous Service Co., Buckingham, and New Hope Crushed Stone & Lime Co., New Hope, quarried and crushed limestone for road material. New Hope Crushed Stone & Lime Co. also sold a small quantity to Government projects. At the Karpinski open quarry near Langhorne, Edward Karpinski produced dimension limestone as rubble stone. General Crushed Stone Co. produced crushed basalt at the Rock Hill quarry and crusher near Quakertown for use as road material and railroad ballast and marketed a quantity to Government agencies. David D. Derstine, Telford, crushed basalt for road material. At an open quarry near Parkland, J. Magazino & Son produced dimension quartzite for structural building and broken stone for road material. From an open quarry near Coopersburg, Coopersburg Granite Co. produced dimension granite, usable for architectural use and as monuments, which was marketed under the trade name America's Premier Blue-Black granite. C. Bucciarelli & Sons produced miscellaneous building stone and crushed stone for use as road material at the Edison quarry, Edison. Rushland quarry, Rushland, crushed miscellaneous stone utilized for road material;

George Wiley, Point Pleasant, and Samuel M. Yoder Estate, Blooming Glen, crushed miscellaneous stone (bluestone).

Quakertown Brick & Tile Co., Quakertown, produced a quantity of miscellaneous clay for use in manufacturing heavy clay products.

Hyzer & Lewellen exfoliated vermiculite at a plant near Southampton, for use in producing refractory and insulating cement.

Butler.—Ten companies producing the largest tonnage of bituminous coal in Butler County were: Tri-County Fuel Co., Allison Engineering Co., Sunbeam Coal Co., Portersville Coal Co., West Freedom Mining Co., Grove City Construction Co., Chutz Bros., Lucas Mining Corp., Theodore DeMarsh, and Kenry Coal Co. Coal was mined by underground, strip, and auger mining methods.

Penn-Dixie Cement Corp., West Winfield, mined limestone underground for manufacturing cement at its No. 9 plant. Portland cement of types I–II (general use and moderate heat), type III (high-early strength) non-air-entrained, and mortar cement were produced by the wet process.

Michigan Limestone Division, United States Steel Corp., Boyers, produced limestone from an underground mine for use as blast-furnace flux, road material, railroad ballast, and in cement manufacture. The Grove City Limestone Co. open quarry and crusher at Branchton crushed limestone for road construction and agricultural purposes. In addition, both companies sold a quantity as roadstone to Government agencies.

The Mercer Lime & Stone Co. lime plant near Branchton produced quicklime for use in open-hearth and electric furnaces and hydrated lime for agricultural use, sewage treatment, and water purification.

H. W. Cooper processed paving sand and gravel from a pit and fixed plant near Slippery Rock. The Harold M. Martsolf plant processed bank-run sand near Slippery Rock for use as paving material.

Plastic fire clay was produced by a company near Claytonia; other fire clay came from the Chutz Bros., Slippery Rock, open pits for use in manufacturing refractories. Miscellaneous clay was mined by Scott Borland from an open pit near Mars for use in manufacturing heavy clay products.

Cambria.—Cambria County ranked second in the State in bituminous-coal production. Clays, stone, and crude iron oxide pigments, in order of decreasing value, were produced.

Leading producers of bituminous coal were: The Berwind-White Coal Mining Co., Bethlehem Limestone Co., Bethlehem Mines Corp., Ebensburg Coal Co., Barnes & Tucker Co., Sterling Coal Co., Johnstown Coal & Coke Co., Rich Hill Coal Mining Corp., Vinton Coal & Coke Co., and Springfield Coal Corp. Bituminous coal was recovered from underground, strip, and auger mines.

Hiram Swank's Sons, Inc., South Fork, and Harbison-Walker Refractories Co., Blandburg, produced fire clay from underground mines for use in manufacturing refractories. The underground mine of Patton Clay Mfg. Co. near Patton yielded fire clay. Triangle Clay Products Co. produced miscellaneous clay at its open pit near Johnstown for use in manufacturing heavy clay products. Nicosia Stone Quarry near Johnstown crushed sandstone for use in producing silica brick.

The Nicosia Stone Quarry, Johnstown, open quarry and crusher produced stone for miscellaneous uses.

Crude iron oxide pigments of the yellow-sulfur mud variety were produced at Mine 31 near Twin Rocks by Lanzendorfer Trucking Co. and marketed as paint pigment.

Cameron.—John E. Rydesky and S. Brake Slyder produced bituminous coal, the only mineral output in Cameron County in 1955, from strip mines.

Carbon.—Leading producers of anthracite in Carbon County were: Panther Valley Coal Co., Valley Stripping Corp., Coaldale Mining Co., Inc., Glen Alden Corp., Jackson Coal Co., J. G. Connell Coal Co., Wat-Rap Coal Co., Spearhead Mining Co., Gravine Coal Co., and A. R. Chamberlain Coal Co. Anthracite was recovered from underground mines, strip pits, and culm banks.

Alliance Sand Co., Inc., processed sand for building, fire or furnace, and engine sand at a quarry and plant near Palmerton. Paving sand was produced by Butz Lumber Co. from a quarry near Palmerton. Wagner Sand Co. produced a quantity of paving sand and gravel from a quarry east of Hazleton in Carbon County.

Three companies produced shale as a byproduct of anthracite mining and sold the material to Lehigh Materials Co. for manufacturing lightweight aggregate.

Centre.—Centre County led in lime production in the State and increased greatly in tonnage and value compared with 1954. Other mineral commodities produced were bituminous coal, stone, and clays.

Three companies reported lime production: Standard Lime & Cement Co., Pleasant Gap, produced hydrated lime; National Gypsum Co. and Warner Co., Bellefonte, both produced quicklime and hydrated lime. The lime was sold for use principally in open-hearth and electric furnaces and in paper manufacture.

Ten leading producers of bituminous coal in Centre County were: Robert Bailey, Elliot Coal Mining Co., Inc., R. S. Carlin, Inc., Cherry Run Coal Mining Co., Inc., H. & R. Coal Co., River Hill Coal Co., C. J. Semple, Rougeux, Trimpey & Rougeux, Pennbrook Contracting Co., and Koshko Bros. Coal Co. Output of bituminous coal came principally from strip mines; some production came from underground mines.

Six companies crushed limestone in Centre County in 1955, 2 from underground mines and 4 from open quarries. Standard Lime & Cement Co., Pleasant Gap, mined limestone underground for use as open-hearth flux, road material, stone sand, and in manufacturing lime. Warner Co., Bellefonte, produced limestone for road construction, agricultural purposes, and for manufacturing glass, rubber, and miscellaneous fillers and lime. Output of limestone from the open quarries of National Gypsum Co. (Bellefonte), Neidigh Bros. Limestone Co. (State College), Valley View Lime Co. (Marion Township), and Whiterock Quarries (Pleasant Gap) was used and sold mainly for road construction and blast-furnace and open-hearth flux. McFeely Brick Co. produced quartzite at Port Matilda for transportation to its silica-brick manufacturing plant in Latrobe.

Fire clay of the flint variety used for manufacturing firebrick and block was mined by General Refractories Co. from an underground

mine near Orviston and by J. H. France Refractories Co. from an open-pit mine near Snow Shoe. J. H. France Refractories Co. produced and sold plastic fire clay for refractory uses.

Chester.—W. E. Johnson, Inc., produced dimension limestone for rough construction purposes from a quarry near Paoli and also crushed limestone at a nearby plant for use as road material and marketed it for Government projects. Limestone for use as road material, blast-furnace flux, and asphalt was recovered from a quarry and crushed at the local plant by Valley Forge Stone Co., Malvern. A quantity of this material was sold for roadstone to Government agencies. Warner Co., at the Cedar Hollow quarry near Devault, crushed limestone for use in blast-furnace flux, refractories, road material, agricultural purposes, chemical uses, and lime manufacture. Dimension basalt, rough, dressed, and rubble as building stone, was recovered from the French Creek Granite Co. quarry near St. Peters. V. DiFrancesco & Sons near Devault and Keystone Trappe Rock Co. near Glenmoore quarried basalt mainly for use as road material and railroad ballast and sold some material to local Government agencies. The Avon-Grove quarry near Avondale, operated by Abram T. Minor, and Albert Rotunno's quarry near West Grove yielded dimension sandstone as construction material, rubble, rough architectural, and flagging, and a small quantity of crushed sandstone as roadstone.

Warner Co., at the Cedar Hollow plant near Devault, produced and sold quicklime for use in agricultural purposes, mason's building lime, sewage and tradewaste treatment, tanneries, and water purification.

McAvoy Vitrified Brick Co., Phoenixville, mined miscellaneous clays used to manufacture building brick, and Philip D. Cope, Lincoln University, for use in producing flowerpots.

Clarion.—Bituminous coal and clays, the only minerals produced in 1955 in Clarion County, increased greatly in value compared with 1954.

Ten leading producers of bituminous coal in Clarion County in 1955 were: H. N. McNutt Coal Co., Mays Coal Co., W. P. Stahlman, Zacherl Coal Co., G. A. Stiles Co., Wingert Contracting Co., Inc., Mac Coal Co., Allison Engineering Co., C. & K. Coal Co., and Harold A. Siegel. Most bituminous coal was mined from strip operations; a small tonnage was recovered from underground mines.

McLain Fire Brick Co., Division of H. K. Porter Co., Inc., St. Charles, produced plastic fire clay; Climax Fire Brick Co., New Bethlehem, reported plastic and flint fire clay for manufacturing fire brick and block. New Bethlehem Tile Co., New Bethlehem, produced miscellaneous clay and plastic fire clay from an open pit for use in manufacturing heavy clay products. Frank B. Pope Co. produced plastic and flint fire clays from open-pit and underground mines near New Bethlehem for mortar manufacture. Lucinda Clay Co., J. F. Eiswerth Estate, and William Judy & Sons, all near Lucinda, produced and marketed flint fire clay for manufacturing firebrick and block. William Judy & Sons shipped clay to its Ohio refractories.

Clearfield.—Leading producers of bituminous coal in Clearfield County were: Bradford Coal Co., Shawville Coal Co., Lingle Coal Co., Benjamin Coal Co., Diamond T Mining Corp., R. S. Carlin, Inc., Waroquier Coal Co., Putnam & Greene, Inc., Robert Bailey, and

Woolridge Coal Co. Coal was produced principally from strip mines, followed by underground and auger mines.

The principal output of 12 companies producing clay was fire clay. Clearfield County was the leading producer of fire clay in 1955 in Pennsylvania. Fire clays of the flint and plastic variety were recovered from open-pit and underground mines by North American Refractories, Grampian and Curwensville; Blair Clay Products Co. and Clearfield Clay Products Co., Curwensville; Laclede-Christy Co. of Pennsylvania, Clearfield and Osceola Mills; General Refractories Co., Clearfield; Harbison-Walker Refractories Co., near Clearfield; and Hiram Swank's Sons, Inc., Boardman. Production by these seven companies was used in manufacturing refractories. Williamsgrove Clay Products Co., Bigler, and Robinson Clay Product Co. of Pennsylvania, Clearfield, mined flint fire clay and miscellaneous clay from open pits for use in producing heavy clay products. The open-pit mines of Artie K. Baughman (Bigler), T. & P. Clay Co. (West Decatur), and W. K. Turner & Sons (Wallaceton) produced plastic fire clay, other fire clay, and plastic and flint fire clays, respectively which were sold to the open market for refractory use.

Bells Landing Sand & Gravel, Bells Landing, and Mervyl & Kathryn Yeager, Clearfield, quarried and processed building sand and gravel.

Harbison-Walker Refractories Co. exfoliated vermiculite at one of its brick plants at Clearfield and utilized the material in manufacturing its refractory products.

Clinton.—Ten companies produced bituminous coal in Clinton County in 1955: Parsons Bros., John E. Teeter, C. V. Fink & Son, Pennbrook Contracting Corp., Anna Holmes, Joseph Antosh, Harry J. Batschelet Estate, Veres Bros., Frank Winkelman, and Fred Sorgen. Strip mining was the principal means of producing coal, followed by underground and auger mining.

Kelsey Mining Co., Lock Haven, mined and sold diaspore fire clay from an open-pit mine, for use in manufacturing high-alumina brick. North American Refractories Co. mined plastic fire clay from an underground mine near Lock Haven and flint clay from an open-pit mine near Renovo and used the output for manufacturing firebrick, block, and mortar. General Refractories Co mined fire clay of the flint variety underground near Beech Creek for its use in manufacturing firebrick and block. Mill Hall Clay Products, Inc., mined miscellaneous clay from an open pit near Castanea for use in manufacturing heavy clay products.

The only producer of stone in Clinton County was Lycoming Silica Sand Co. Stone was mined at the Salona quarry, Salona, and crushed at a local plant for road material and railroad ballast. A quantity of the material was sold to a Government agency as road material.

Columbia.—Anthracite, sand and gravel, and clays produced in Columbia County in 1955 increased in both tonnage and value compared with 1954.

Ten leading producers of anthracite in Columbia County in 1955 were: Raven Run Coal Co., Susquehanna Collieries Division of M. A. Hanna Co., Coates Coal Co., Sanchez Construction Co., Martinez & Broderick, Philadelphia & Reading Corp., Hazlebrook Coal Co., Sullivan Trail Coal Co., Pine Ridge Mining Co., and Centralia

Mining Co. Anthracite produced in this county was mined from underground mines, strip pits, and banks.

Building sand and gravel and a quantity of sand for paving use were processed by Bloomsburg Sand & Gravel Co. from a quarry and fixed plant near Bloomsburg.

Miscellaneous clay was mined by Lloyd E. Eister from an open pit near Briar Creek and marketed for manufacturing heavy clay products. Alliance Clay Product Co., Mifflinville, mined miscellaneous clay from an open pit for use in manufacturing heavy clay products.

Crawford.—Sand and gravel processed for use as building material was recovered by Meadville Supply Co., Saegertown, and Hasbrouck Sand & Gravel, Titusville. Sand & Gravel Supply, Conneaut Lake, and Fairfield Sand & Gravel Co., Cochranton, produced and processed bank-run sand and gravel for building and paving uses. W. L. Dunn processed bank-run sand and gravel from a pit near Cochranton for use in ready-mix concrete and bituminous paving mix. A quantity of sand was sold to the Pennsylvania Department of Highways.

Cumberland.—Stone, sand and gravel, and clays were produced in Cumberland County in 1955. This county was the principal source of kaolin in Pennsylvania.

Three quarries crushed and sold limestone as road material: Hempt Bros., Camp Hill; R. W. Smith & Son, Bowmansdale; and Valley Quarries, Inc., Shippensburg. Locust Point Stone Quarries at the Locust Point quarry near Mechanicsburg crushed limestone for road construction and agricultural purposes.

C. L. Goodhart, Walnut Bottom (Southampton Township), mined and processed building sand and paving gravel, and Raymond Bender & Son, Mount Holly Springs, building sand. The Hempt Bros., Camp Hill, pit and plant, produced sand as paving material.

Philadelphia Clay Co. produced and sold kaolin from an open pit near Mount Holly Springs for use in producing hydraulic cement.

Dauphin.—Bethlehem Limestone Co. at the Steelton quarry, Steelton, crushed limestone for use in blast-furnace flux, refractories, road material, and railroad ballast. Hoffman Bros. & Wilson, Inc., crushed limestone for road material from the Elder quarry near Harrisburg. Both companies sold a quantity of crushed limestone under contract to Government agencies. H. E. Millard Lime & Stone Co. at an underground mine west of Palmyra as Dauphin County produced crushed limestone for use as blast-furnace flux, road material, railroad ballast, cement, and soil conditioners. Quantities also were used at the company Swatara plant in producing quicklime and hydrated lime.

Six companies produced anthracite from strip pits, deep mines, and banks. Producers of anthracite were: Upper Dauphin Co., Wiconisco Washery, K. D. & T. Coal Co., Spring Glen Coal Co., Dayton Breaker, and Howard Koppenhaver.

Sand and gravel for paving use was produced by Highspire Sand & Gravel Co., Ltd., from a pit and preparation plant near Highspire. Pennsylvania Supply Co., Harrisburg, produced and sold paving sand to a local Government agency. F. H. Downey, Inc., produced a small quantity of building sand by dredging near Harrisburg.

Bethlehem Limestone Co., Steelton, produced miscellaneous clay from open pits for manufacturing refractories and covering under-

ground pipelines; output from the Glen-Gery Shale Brick Corp., Harrisburg, and Middletown, pits was used in manufacturing heavy clay products.

Delaware.—General Crushed Stone Co., Glen Mills, and V. DiFrancesco, Llanerch, crushed basalt for use as road material and railroad ballast. Both companies sold material under contract to Government agencies. Media Quarry Co., Media, produced dimension sandstone for construction use. Lima Building Stone Quarry, Inc., Lima, recovered dimension granite for use in construction work.

Sinclair Refining Co. at its Marcus Hook Refinery produced brimstone as a byproduct in liquid purification of gas by the Claus-type process.

The output of miscellaneous clay from Philadelphia Brick Co. (only producer of clay) open pit in Darby Township was used in manufacturing building brick.

Perlite Products, Inc., expanded perlite at a plant near Primos, for use in plaster and concrete aggregate, refractories, and horticultural mixtures.

Elk.—Leading producers of bituminous coal in Elk County were: P & N Coal Co., Inc., Blue Valley Coal Co., Perry & Van Slander, New Shawmut Mining Co., Glen Fisher Coal Co., Pete Micale Coal Co., Wabash Ridge Corp., Walburn Coal Co., Brandy Camp Coal Co., and Ralph W. De Lullo. Coal was produced from strip, underground, and auger mines, in order of output.

William J. Meyer recovered plastic fire clay from open pits near St. Marys for use in manufacturing firebrick and block; output from the St. Marys Sewer Pipe Co. pits was used in manufacturing heavy clay products.

United States Department of Agriculture, Forest Service, Allegheny National Forest, produced a small quantity of road gravel and purchased a quantity produced under contract for use in Elk County.

Erie.—Nickel Plate Sand & Gravel Co. mined and processed paving sand and gravel, and gravel for building and miscellaneous uses from a pit and plant near Fairview. North Girard Concrete Works, Lake City, recovered sand and gravel for use in manufacturing ready-mixed concrete for driveways. Peerless Mineral Products Co. at a quarry and plant near Springfield produced molding sand. Gravel for miscellaneous uses was recovered from a pit and plant near Erie and marketed by Wagner Concrete Building Products. City Engineer of Erie purchased a quantity of sand for asphalt paving.

Corry Bog, Inc., produced reed (or sedge) and humus peat from a bog near Corry.

Fayette.—Leading producers of bituminous coal in Fayette County in 1955 were United States Steel Corp., Weirton Coal Co., Republic Steel Corp., Eastern Gas & Fuel Associates, Davidson-Connellsville Coal & Coke Co., Farm Coal Co., Bridgeview Coal Co., William Piccolomini, Swaney & Swaney, and Saberdash Coal & Coke Co. Most bituminous coal was produced from underground mines; a small tonnage came from strip mines.

Harbison-Walker Refractories Co. recovered flint fire clay from the Smith open pit near Ohiopyle for use in manufacturing heavy clay products. Big Savage Refractories Corp. mined plastic clay at its open pit near Ohiopyle and marketed a small quantity for use in manu-

facturing refractories. Layton Fire Brick Co., Layton, produced miscellaneous clay from underground and open-pit mines for use in manufacturing heavy clay products. Robert N. Matthews, Uniontown, produced and marketed plastic and flint fire clays for manufacturing refractories.

The Vesco Corp. (only producer of limestone in Fayette County) quarry near Lake Lynn produced crushed and broken limestone for road material, agricultural purposes, and rock dust for coal mines. Crushed sandstone usable for road material was produced from a quarry and crusher by Connellsville Bluestone Co., Scottdale; General Refractories Co. produced crushed sandstone from the Childs quarry near Layton for manufacturing silica brick. Miscellaneous dimension stone for use as flagging stone was quarried by Lynn's Quarry, Belle Vernon.

The McClain Sand Co., Inc., Point Marion, river dredge and preparation plant produced sand and gravel for building, paving, and miscellaneous uses, and for use in coal preparation.

Forest.—Mineral production in Forest County consisted of paving and building sand and gravel dredged and processed by Tionesta Sand & Gravel, Inc., near Tionesta. A quantity of the washed material was sold to the Pennsylvania Department of Highways. United States Department of Agriculture, Forest Service, Allegheny National Forest, produced a small quantity of paving gravel and purchased a quantity produced under contract for its own use in Forest County.

Franklin.—Six companies crushed limestone at quarries in Franklin County primarily for road material and agricultural purposes. The producers of limestone were: Binkley Bros. (who sold out to New Enterprise Lime & Stone Co., Inc., during the early part of the year), Dry Run; Fry Coal & Stone Co., Williamson and Zullinger; Stewart & Gaston, Shippensburg; Valley Quarries, Inc., Chambersburg; and Baer & Martin, Orrstown.

Near Fayetteville, Mount Cydonia Sand Co., Inc., produced sand for molding purposes at an open pit and preparation plant; Caledonia Sand Co. mined and prepared sand for building purposes.

Frank L. Heinbaugh marketed the output of quicklime from the Blue Spring Lime plant near Mercersburg solely for use as agricultural lime.

Fulton.—The only producer of bituminous coal in Fulton County in 1955 was Rockhill Coal Co. at a strip mine.

H. B. Mellott Estate, Inc., quarried limestone for use as road material at the Charleton quarry, Warfordsburg, and the Morton quarry and crushed at a plant near Big Cove Tannery.

Greene.—Greene County ranked second as a source of bituminous coal in the State in 1955. Miscellaneous clay also was produced.

Chief producers of bituminous coal in Greene County were: United States Steel Corp., Emerald Coal & Coke Co., Duquesne Light Co., Buckeye Coal Co., Crucible Steel Co., Mather Collieries, Jones & Laughlin Steel Corp., Rosedale Coal Co., Molnar Bros. Coal Co., and Jimmie's Coal Co. Underground mines yielded most of the coal produced; a small tonnage was produced from strip mines.

Greene County Brick & Stone Co., Waynesburg, mined a small quantity of miscellaneous clay from an open pit for use in producing heavy clay products.

Huntingdon.—Huntingdon County ranked second in sand and gravel production in the State. Other minerals produced were stone, bituminous coal, and clays.

Alexandria Fire Clay Co., Alexandria, produced and sold unwashed sand at an open pit and plant for fire or furnace sand and miscellaneous uses. Warrior Ridge Sand Co. produced a small quantity of building sand at a site near the crest of Warrior Ridge. Pennsylvania Glass Sand Corp. at a quarry and crusher at Mapleton Depot produced and prepared sand for use as glass, molding, engine, and miscellaneous sand. In addition, sand was ground principally for use as abrasives, filler, pottery, porcelain, tile, and miscellaneous uses.

New Enterprise Stone & Lime Co., Inc., McConnelstown, Tyrone Lime & Stone Co., and Warner Co., east of Tyrone in Huntingdon County produced and sold crushed and broken limestone for use as road material. Tyrone Lime & Stone Co. also produced and sold limestone for agricultural purposes, rock dust, and stone sand. Warner Co. sold limestone for riprap and railroad ballast. North American Refractories Co., Three Springs, and Harbison-Walker Refractories Co., Mount Union, produced ganister rock for use in manufacturing silica brick.

In Huntingdon County in 1955, 7 companies produced bituminous coal; 4 strip-mine companies were Rockhill Coal Co., Miller Contracting Co., C. E. & C. K. Crotsley, and C. E. Clark; 3 operators of underground mines were Ralph L. Clark & Sons, Chamberlain Bros. Coal Co., and Ramper & Mort.

Alexandria Fire Clay Co., Alexandria, mined plastic fire clay from open-pit mines and marketed the clay for manufacturing mortar; the output of Harbison-Walker Refractories Co., Shirleysburg, was used for manufacturing glass refractories.

Indiana.—Bituminous coal was produced in Indiana County in 1955 from underground, strip, and auger mines. Leading producers were: Rochester & Pittsburgh Coal Co., Imperial Coal Co., Pennsylvania Electric Co., Pine Township Coal Co., Crichton Coal & Coke Co., Clearfield Bituminous Coal Corp., Jarvis & Kepple Coal Co., Conrad Coal Co., W. J. Lyda Coal Co., and E. & S. Coal Co.

Hiram Swank's Sons, Inc. (the only producer of clay in Indiana County), produced plastic fire clay from the Swank No. 6 underground mine near Clymer for use in refractories manufacture.

Smicksburg Lime, the only producer of limestone in Indiana County in 1955, sold its entire output from an underground mine near West Mahoning for agricultural purposes.

Jefferson.—Production of both Jefferson County mineral commodities—bituminous coal and clays—increased slightly in value compared with 1954.

Bituminous coal was produced from underground, strip, and auger mines. Leading producers of bituminous coal were Northwestern Mining & Exchange Co., Minns Coal Co., W. P. Stahlman, Callahan Coal Co., Knisely Coal Co., Everett Moore Coal Co., Pulford Coal Co., C. E. Lauver & Sons, Compton Coal Co., and Kann & Gutsie Coal Co.

Henry O'Neill & Co. underground mine near Brookville yielded flint clay for use in manufacturing firebrick and block and mortar. Plastic fire clay and miscellaneous clays were produced from an open

pit and an underground mine by The Brockway Clay Co., Brockway, and the Hanley Co. underground mine near Summerville for use in manufacturing heavy clay products.

Juniata.—W. N. Quigley, Mifflintown, and Juniata Limestone Co., McAlisterville, produced crushed and broken limestone for road construction and sold a quantity of the material to Government agencies. National Refractories Co., Inc., produced ganister rock for use in silica brick at the Van Dyke plant near Thompsontown.

Lackawanna.—Anthracite was the only mineral commodity produced in Lackawanna County in 1955. Leading producers were: Hudson Coal Co., Moffat Coal Co., Village Slope Coal Co., Turnpike Coal Co., Gillen Coal Co., Northwest Coal Co., Lackawanna Mining & Construction Co., Halsey Contracting Co., Perry Construction Co., and Pioneer Excavating Co. Anthracite was produced from underground mines, strip pits, and culm banks.

Lancaster.—In Lancaster County in 1955, 13 companies quarried limestone; 2 produced both dimension and crushed limestone; and 12 crushed limestone. Dimension stone was produced by J. C. Showalter, Blue Ball, and L. F. Zook & Sons, Bareville, for rough structural use. Crushed limestone was produced by Morgantown Stone Co., D. M. Stoltzfus & Son, Talmage; J. E. Baker Co., Bainbridge; Binkley & Ober, East Petersburg; Binkley Bros., Inc., Lititz; David M. Burkholder, Martindale; J. Miller Eshleman, Landisville; Heisey Bros., Landis Stone Meal Co., Rheems; A. G. Kurtz & Sons, Inc., Denver; Ivan M. Martin, Inc., Blue Ball; D. M. Stoltzfus & Son, Quarryville and Peach Bottom. These companies produced and sold limestone mainly for highway construction, agricultural purposes, and lime and cement manufacture.

Amos K. Stoltzfus produced and marketed quicklime and hydrated lime for agricultural use at the Maxwells Hill plant 2 miles west of Morgantown in Lancaster County. The J. E. Baker Co. plant near Bainbridge, used limestone produced at the Billmeyer quarry to manufacture dead-burned dolomite from quicklime for use as refractory material.

Anthracite was produced in Lancaster County from dredge operations.

A. T. Harris Sand Co., Salisbury Township, produced and prepared sand as fire or furnace sand. Milton Grove Sand Corp., Milton Grove, and J. C. Budding Co., Lancaster, produced and processed a small quantity of sand for paving material, which was sold to a local Government agency.

Glen-Gery Shale Brick Corp. from an open-pit mine near Ephrata and Lancaster Brick Co. near Lancaster produced miscellaneous clay for use in manufacturing heavy clay products. Whitaker Clay Co., Narvon, produced and marketed plastic fire clay and miscellaneous clay from an open pit for manufacturing refractories.

Lawrence.—Production at the Bessemer Limestone & Cement Co. cement plant at Bessemer consisted of air-entrained types I-II (general use and moderate heat), also non-air-entrained types I-II, type III (high-early-strength), and portland puzzolan. A quantity of mortar cement was also prepared and marketed under the trade name of Bessemer Mortar. Production at the Medusa Portland Cement

Co. plant at Wampum consisted of types I-II, type III, a quantity of waterproof-portland cement, and masonry cement.

Bessemer Limestone & Cement Co., Bessemer, quarried and crushed limestone for flux, foundry, road material, and cement manufacture. Crushed limestone, usable for flux, open-hearth plants, road construction, and cement manufacture, was quarried by Michigan Limestone Division, United States Steel Corp., Hillsville. New Castle Lime & Stone Co., Mahoning Township, mined and crushed limestone at its local plant for use as road material and for agricultural purposes. Medusa Portland Cement Co., Wampum, crushed limestone for cement production.

Leading producers of bituminous coal in Lawrence County were: The Buckeye Coal Co., A. W. Latze Contracting Co., Lake Erie Coal Co., Corry Excavating & Mining Co., Butler Equipment Co., Ambrosia Coal & Construction Co., The Marshall Mining Co., J. H. Filby Coal Co., Dodds Coal Co., and McQuiston Coal Co. Strip mining furnished the largest tonnage of bituminous coal produced; a small tonnage was mined underground.

Metropolitan Brick, Inc., Bessemer, and Fenati Brick Co., Inc., New Castle, mined plastic fire clay and miscellaneous clay from open-pit mines for use in producing heavy clay products. Keystone Sand & Gravel Co., New Castle, produced and marketed loam clay from an open-pit mine for manufacturing foundries and steelworks.

Mahoning Valley Sand Co. near West Pittsburg (Taylor Township) and Superior Sand & Supply Co. near Eastbrook mined and processed sand and gravel for use as building material.

D. M. Boyd and Moore's Peat Humus Co. produced humus peat from bogs south of Leesburg in Lawrence County.

Zonolite Co. exfoliated vermiculite at a plant near Ellwood City.

Lebanon.—Lebanon County was the only metal-producing county in Pennsylvania in 1955. Iron ore (usable), copper, lime, stone, cobalt, pyrites, gold, silver, and anthracite, in order of decreasing value, were produced.

Bethlehem Cornwall Corp., subsidiary of Bethlehem Steel Co., operated the Cornwall iron-ore mine and the Lebanon concentrator plant. This mine was the only metal-producing mine in Pennsylvania in 1955. Gold, silver, cobalt, copper, and pyrites were recovered as byproducts.

H. E. Millard Lime & Stone Co. produced and marketed both quicklime and hydrated lime at its Annville and Palmyra plants principally for mason's building lime, agricultural, open-hearth and electric furnaces, and water purification and softening.

Limestone sold mainly for use in highway construction was produced by Becker Bros., Annville; Pennsylvania Aggregates, Inc., Cornwall; and Fiala Crushed Stone Corp., Annville, which also produced a quantity of limestone for blast-furnace flux and dolomite limestone for manufacturing cement. Calcite Quarry Corp. quarry and crusher near Lebanon produced limestone sold or used for flux, open-hearth plants, copper smelters, foundries, and road material, as well as a small quantity for railroad ballast. North American Refractories Co., Womelsdorf, transported crushed sandstone by aerial tram from its open quarry to the plant for silica-brick production. H. E. Millard Lime & Stone Co. operated a quarry and crusher at Annville

and a plant at Palmyra to produce crushed limestone usable for furnace flux, road material, railroad ballast, agricultural purposes, miscellaneous filler, and cement and lime manufacture. This company also sold a small quantity of road material to Government agencies.

A small quantity of anthracite was produced from dredge operations in Lebanon County in 1955.

Lehigh.—Four companies manufactured cement from cement rock and crushed limestone: Giant Portland Cement Co., Reliance plant, Egypt; Lehigh Portland Cement Co., Fogelsville plant and No. 2 plant, Ormrod; The Whitehall Cement Manufacturing Co. plant at Cementon; and Coplay Cement Manufacturing Co. Mill C plant, Coplay. Coplay Cement Manufacturing Co., operated two quarries and an underground mine but discontinued work at the underground mine owing to floods in August 1955. Production of the four companies consisted principally of portland cement of the types I-II (general use and moderate heat), air-entrained and non-air-entrained, type III (high-early-strength), and a small quantity of masonry or mortar cements.

Lehigh Stone Co. produced and marketed crushed limestone for use in road construction at a quarry and crusher near Ormrod.

Penn Big Bed Slate Co., Inc., the only producer of slate in Lehigh County in 1955, quarried near Slatington. Output of slate was sold for a variety of uses, mainly for standard roofing, structural and sanitary uses, blackboards, and bulletin boards.

Robert A. Reichard, Inc., crushed and marketed oystershell for use as poultry grit from its crushing plant at Allentown.

Pennsylvania Perlite Corp. expanded perlite at a plant near Allentown.

Luzerne.—Luzerne County ranked second in value of mineral production in the State and as a coal-producing county.

Ten of the leading producers of anthracite in Luzerne County were: Glen Alden Corp., Lehigh Valley Coal Co., Harry E. Coal Co., Jeddo-Highland Coal Co., Susquehanna Collieries Division of M. A. Hanna Co., Number Fourteen Coal Co., Payne Coal Co., Capone Coal Co., Heidelberg Coal Co., and Kehoe-Berge Coal Co. Anthracite was mined from deep mines, strip pits, and culm and silt banks.

Coon Certified Concrete produced crushed sandstone for use as road material and a small quantity of dimension stone for rough construction at the North Mountain quarry near Sweet Valley. General Crushed Stone Co., White Haven, crushed sandstone usable for road material and railroad ballast. Both companies sold a quantity of the material to Government agencies. Hayes Bros. Stone Co., White Haven, quarried quartzite for rough construction, architectural, and flagging purposes.

Five companies produced both sand and gravel principally for building and paving uses: Airport Sand & Gravel Co., West Wyoming; American Asphalt Paving Co., Chase (Jackson Township); Honey Hole Sand & Stone Co., Hazleton; Glendale Sand & Stone Co., Avoca; and Frank B. Sgarlat Estate, Kingston. A quantity of this material was also marketed to Government agencies for use on highways. Herman Cunfer sold unwashed sand for miscellaneous uses direct from an open pit near Drums.

Blue Ridge Soil Pep Co., Inc., recovered humus peat, and Pennsylvania Peat Moss, Inc., produced moss and humus peat from bogs near White Haven.

Hazleton Brick Co., Hazleton, only producer of clay in Luzerne County, produced miscellaneous clay from an open pit for use at its local plant for manufacturing building brick.

Lycoming.—Sand and gravel was mined and processed principally for structural and paving uses by Lycoming Silica Sand Co. and J. A. Eck & Sons, Inc., both near Montoursville. In addition, Lycoming Silica Sand Co. produced sand and gravel for miscellaneous uses and marketed a quantity of paving sand and gravel to the Pennsylvania Department of Highways.

Muncy Lime Products crushed limestone for agricultural purposes and the manufacture of lime at the Chippewa quarry near Muncy. Lycoming Silica Sand Co. from the Lime Bluffs quarry and crusher near Muncy, and Pine Creek Lime & Stone Co., Jersey Shore crushed limestone for use as road material. Pine Creek Lime & Stone Co. also crushed limestone for agricultural uses. A quantity of agricultural and road materials was sold under contract to Government agencies. Washington Township Bureau of Roads, Elimsport, crushed limestone for general maintenance and township roads. John T. Morgan produced a small quantity of sandstone as flagging stone at a quarry near Slate Run.

Four companies produced bituminous coal in Lycoming County in 1955. Fisher & Smith operated a strip mine; Dan and Glen Thomas, O. R. Carson, and Kaznowski & Kaznowski mined underground.

Penn Paint Filler Co. near Antes Fort produced and prepared rottenstone by crushing, drying, and pulverizing. This material was sold for use as abrasives and filler. The quarry and plant of Keystone Filler & Mfg. Co. near Muncy was temporarily shut down during 1955.

A small quantity of quicklime was produced and sold for use as agricultural lime by Muncy Lime Products at its Chippewa plant near Muncy.

Keystone Filler & Mfg. Co., Muncy, produced miscellaneous clay for use in paints from an open-pit mine.

McKean.—Three companies—P & K, Inc., Kaul Clay Products Co., and Bowland Contractors—produced bituminous coal in McKean County by strip-mine methods.

Plastic fire clay was produced by Kaul Clay Products Co. from the Clermont open-pit mine for use at a local plant in manufacturing heavy clay products. Kness Bros., Mount Jewett, operated an open-pit mine, and marketed the clay for use in manufacturing refractories.

C. L. McGavern, Jr., Eldred, produced unwashed sand for use as molding sand. Forest Service, Allegheny National Forest produced a small quantity of gravel for paving use and also purchased a quantity under contract.

Mercer.—Leading producers of bituminous coal were: Bowie Coal Co., The Buckeye Coal Co., Earl M. Reed Coal Co., Estate of George Bobo, Coyer Coal Mines, Fisher Mining Co., Center Coal Co., Plotts & Boyd Coal Co., Mercer Coal Producing Co., and Smith Contracting Co. Most bituminous coal came from strip operations; a small tonnage was mined underground.

Sand and gravel for structural purposes was mined and processed by Transfer Sand & Gravel near Transfer and Seidle Sand & Gravel, Mercer. The latter company also produced a large quantity of sand and gravel for paving material.

Dimension sandstone for use as rough construction stone was obtained from the Rock Kastle quarry north of Volant in Mercer County by Welty M. Smeltzer. White Rock Silica Sand Co. crushed sandstone at the White Rock quarry and crusher at Greenville mainly for use as furnace or converter lining, road material, filler, and foundry stone.

Arthur Minshull produced humus peat from a bog near Jackson Center.

Mifflin.—Bethlehem Limestone Co. crushed a substantial quantity of limestone at the Naginey quarry and crusher for fluxing and road material and a small quantity for use as stone sand and miscellaneous uses. It sold a quantity of road material to Government agencies. The Hawstone quarry, Hawstone, operated by Haws Refractories Co., yielded ganister rock utilized by the company for manufacturing silica brick.

James R. Kline's Sons operated a dredge near Lewistown, producing sand for paving and structural uses. Miller Silica Sand Co. operated a pit and preparation plant near Burnham for sand and gravel usable for molding, building, and engine sand. Pennsylvania Glass Sand Corp., McVeytown, produced sand for use as glass, molding, grinding and polishing, and engine sand.

Lewistown Lime Co., Reedsville, only producer of lime in Mifflin County, produced and sold quicklime for agricultural use and hydraulic lime for chemical and other industrial uses.

Monroe.—Mineral production in Monroe County in 1955 consisted of stone and sand and gravel.

Thomas P. Rogers, Stroudsburg, quarried and crushed limestone for use as road material.

Building sand and gravel for use as road material was quarried by Steward White & Clyde White, Stroudsburg. Coolbaugh Sand & Stone, Inc., Tobyhanna (Coolbaugh Township), produced sand and gravel for structural and paving purposes. This company marketed the entire sand and gravel output; a quantity was sold to the Commerce of Pennsylvania for road repairs.

Montgomery.—Stone production in Montgomery County was the largest in the State in 1955 and increased greatly in value compared with 1954. Other mineral commodities produced were cement, lime, clays, and sand and gravel.

Limestone for use as road material was produced from a quarry and crushed by Bradford Hills Quarry, Inc., Norristown, and Glasgow Quarry, Inc., Conshohocken. Stowe Trap Rock Co., Oreland, crushed limestone as riprap, road material, and railroad ballast. Bethlehem Limestone Co., Bridgeport, and G. & W. H. Corson, Inc., Plymouth Meeting, produced crushed and broken limestone mainly for use as blast-furnace flux, road material, railroad ballast, stone sand, agricultural purposes, and in lime manufacture. Montgomery Stone Co. produced dimension basalt, rough and dressed, as construction material and crushed and broken basalt as road material at a

quarry near Montgomeryville. R. K. Kibblehouse produced basalt as road material. William Bambi & Sons, Inc., Norristown, produced dimension sandstone for use as building stone. Irving B. Gill, Collegeville, produced crushed sandstone for use as road material and sold a quantity to a Government agency. Ganister, crushed for use as furnace and converter lining, was produced by Firestone Products Co., Inc., from a quarry at Glenside. Marcolina Bros., Inc., utilized its production of dimension granite from a quarry near Wyndmoor for rough construction purposes. Mica schist, usable mainly as building stone, was produced by A. Manero & Sons, Edge Hill.

Allentown Portland Cement Co. manufactured cement from limestone produced at its No. 2 plant at West Conshohocken. Portland cement of the types I-II (general use and moderate heat), air-entrained, and a small quantity of masonry cement was produced.

G. & W. H. Corson, Inc., produced and marketed quicklime and hydrated lime at Corson's Lime plant near Plymouth Meeting, for use as agricultural lime, refractory material, and mason's building lime.

Miscellaneous clay for use in manufacturing heavy clay products was recovered from open-pit mines by Norristown Brick Co., Norristown; Robinson Clay Product Co., Pottstown; and Lansdale Brick Products Co., Lansdale. In addition, Robinson Clay Product Co. produced plastic fire clay for use in manufacturing heavy clay products. Keller-Whilldin Pottery Co. produced red shale from an open pit for manufacturing flowerpots at its plant in North Wales.

William Bambi & Sons, Inc., Norristown, mined and processed bank-run sand for use as building sand.

Refractory & Insulation Corp. expanded perlite at its plant near Port Kennedy.

Keasbey & Mattison Co., Ambler, and Philip Carey Manufacturing Co., Norristown, produced magnesium carbonate, magnesium oxide, and magnesia insulation from dolomite.

Montour.—Stone was the only mineral produced in Montour County in 1955; it decreased slightly in value compared with 1954.

Two producers crushed limestone solely for use as road material. Narehood Bros., Inc., quarried limestone near Milton. Mausdale Quarry Co. operated the Grovania quarry and crusher near Danville, selling its entire output to Government agencies.

Northampton.—Northampton County led all counties in the State in 1955 in the cement and slate production. Other minerals produced, in order of decreasing value, were stone, sand and gravel, and anthracite.

Ten companies produced cement in Northampton County. Seven companies manufactured cement from their own production of limestone from mines in Northampton County: Alpha Portland Cement Co., Martins Creek; Penn-Dixie Cement Corp., plant No. 5 at Bath and plant No. 6 at Penn Allen; Lone Star Cement Corp., Nazareth; Lehigh Portland Cement Co., Sandts Eddy; Hercules Cement Corp., Stockertown; Dragon Cement Co., Inc., Northampton; and Keystone Portland Cement Co., Bath. National Portland Cement Co. (Bethlehem), Nazareth Cement Co. (Nazareth) and Universal Atlas Cement Co. (Northampton) also produced cement. Production of cement

consisted principally of portland cement types I-II (general use and moderate heat), type III (high-early-strength), air-entrained, non-air-entrained, and a small quantity of masonry or mortar cements.

Northampton County led in slate production in the State and increased slightly in value compared with 1954. The 12 companies producing from quarries and mills were: Albion Vein Slate Co. and David Stoddard & Sons, Inc., Plainfield Township; American Bangor Slate Co., Inc., and Bangor Roofing Slate, Inc., Bangor; Capitol Slate Co., Inc., East Bangor; Chapman Slate Corp., Bath; Anthony Dally & Sons, Inc., Doney Slate Co., Parsons Bros. Slate Co., Parsons Manufacturing Co., and Stephens-Jackson Co., Pen Argyl; and General Slate Co., Windgap. Slate was marketed for various uses, including roofing, flagging, structural and sanitary products, blackboards, billiard-table tops, flour for filler, and electrical slate.

Bethlehem Steel Co., Bethlehem, produced limestone for use as road material, stone sand, and railroad ballast; Trumbower Co., Inc., Nazareth, produced limestone for use as road material. Both sold a quantity to Government agencies.

W. J. Lowe & Sons (Bangor) produced sand and gravel for paving material, and Portland Sand & Gravel Co. (Portland) produced for structural and paving uses at open pits and fixed plants. Both sold to Government agencies for road construction. Sand, usable for concrete and plaster, was produced under contract for Lehigh & New England Railroad Co.

A small tonnage of anthracite was produced in Northampton County from dredge operations.

Northumberland.—Ten companies producing the largest tonnage of anthracite in Northumberland County were: Philadelphia & Reading Corp., Susquehanna Collieries Division of M. A. Hanna Co., Stevens Coal Co., Raven Run Coal Co., North Line Coal Co., Boslego Coal Co., C. & J. Coal Co., Cole & Keiser, West Cameron Coal Co., Inc., and Springfield Coal Co. The anthracite was produced by companies operating deep mines, strip pits and culm banks.

Crushed limestone for use as road material and agricultural purposes was produced by Eugene Meckley from a quarry and crusher at Herndon. Susquehanna Quarry Co. recovered traprock from a quarry near Dalmatia and operated crushing plants in Emmaus and White Haven. Stone was sold for use as riprap, road material, and railroad ballast; a quantity also was sold to Government agencies.

Watsontown Brick Co. and Glen-Gery Shale Brick Corp. produced miscellaneous clay from open pits near Watsontown for use in manufacturing heavy clay products at local company plants. Shale, recovered by Watsontown Mineral Products Co. from an open pit near Watsontown, was used at the company local plant for manufacturing linoleum, oilcloth, and phonograph records.

Clyde Starook produced burnt lime for agricultural purposes from a lime plant near Sunbury.

Wilsons Sand Plant, Montandon, produced a quantity of sand for paving material.

Perry.—Binkley Bros., Inc., produced and marketed limestone usable as road material from a quarry and crusher at Newport.

Philadelphia.—Dredging operations along the Delaware River near Philadelphia yielded sand and gravel processed for use as building

material by The Liberty Corp. The district engineer, Philadelphia, reported no production of sand and gravel, but purchased for use as paving material a large tonnage produced under contract from out-of-State producers.

Joseph Bauder & Sons, Philadelphia, crushed and sold oystershell to feed dealers for use as poultry grit.

Atlantic Refining Co. recovered hydrogen sulfide as a byproduct in the liquid purification of gas.

Potter.—The only mineral produced in Potter County in 1955 was stone, which increased in value compared with 1954.

Dimension sandstone, usable for architectural and flagging purposes, was quarried by Penn Kress Flagstone Co., Inc., Austin. Oswayo Flag Stone Co., Oswayo, recovered miscellaneous stone for use as flagging stone.

Schuylkill.—Leading producers of anthracite in Schuylkill County in 1955 were: Philadelphia & Reading Corp., Gilberton Coal Co., St. Clair Coal Co., Coaldale Mining Co., Inc., Locust Creek Coal Co., Mammoth Coal Co., Stevens Coal Co., Indian Head Coal Co., and Valley Stripping Co. Anthracite was recovered from underground mines, strip pits, and culm and silt banks.

Refractory Sand Co., Inc., near Andreas mined and processed sand for paving, road sand, and miscellaneous uses.

Auburn Brick Co. produced miscellaneous clay from an open-pit mine near Auburn for use in manufacturing heavy clay products.

Andreas Quarry Co. quarry at Andreas crushed limestone at a local plant for use as road material. Harbison-Walker Refractories Co., Andreas, quarried ganister for use in manufacturing silica brick.

Snyder.—National Limestone Quarry operated a quarry and crusher for the J. C. Stahl Estate near Middleburg, producing crushed limestone for use as road material; a quantity of the product was sold to local Government agencies. Limestone for use in manufacturing lime was recovered from a quarry near Mount Pleasant Mills by Carton Comfort.

Anthracite was produced from dredge operations in 1955 in Snyder County.

Two producers of miscellaneous clay from open-pit mines in Snyder County, Glen-Gery Shale Brick Corp., Beavertown, and Paxton Brick Co., Paxtonville, used the clay to produce heavy clay products.

Quicklime was produced and marketed for agricultural purposes by Carton Comfort at Mount Pleasant Mills.

Somerset.—Ten leading producers of bituminous coal in Somerset County were Reitz Coal Co., Bird Coal Co., W. A. Merrill Sons & Co., Loyal Hanna Coal & Coke Co., Cambria Fuel Co., Decker Construction Co., Alumbaugh Coal Co., Wilbur Coal Mining Co., Bahorick Coal Co., and Coal Junction Coal Co. The greatest tonnage of bituminous coal came from underground mines, followed by strip pits and auger mines.

Keystone Lime Co. recovered and sold dimension limestone at an underground mine, quarry, and crusher near Springs for use as rough construction material. A. C. Lottig crushed limestone from an underground mine near Meyersdale, for use in lime manufacture, and New Enterprise Stone & Lime Co., Inc., at a quarry near Somerset, produced crushed stone for use as road material, and marketed a quan-

tity to Government agencies. Sandstone for use in producing concrete block was crushed by Friedens Block Co., Somerset.

Plastic fire clay was produced by W. S. Compton Brick Co. from a combination underground and open-pit mine near Salisbury; Otto Brick & Tile Works from an open pit near Springs; and H. Swank's Sons, Inc., from Swank No. 23 underground mine near Hollsopple. The plastic clay was used at the companies local plants for manufacturing heavy clay products. General Refractories Co. produced flint fire clay from an underground mine for manufacturing refractories.

A. C. Lottig produced a quantity of hydrated lime for agricultural use at the Lottig Lime quarry and plant, Meyersdale.

Quantities of sand and gravel for building use were produced by M. S. Mays & Son near Berlin (Brothers Valley Township); Boswell Sand Co. near Jenners (Boswell Borough) produced sand for paving use. Robert D. Shaulis, Boswell, and Friedens Block Co., Somerset, reported sand for building material.

Sullivan.—Mildred Coal Co. and Bliss Coal Co. produced anthracite from stripping operations.

Susquehanna.—Stone, the only mineral produced in Susquehanna County in 1955, decreased in value compared with 1954.

Dimension sandstone for use as rough construction and flagging stone was produced by H. V. Hartley, Lenoxville; Edwin J. Evans, Lenox Township; Gordon E. Jackson, New Milford; and Lee A. Wilbur, Kingsley. Lee A. Wilbur produced stone of the bluestone variety.

Tioga.—Nine companies produced bituminous coal from underground and strip mines: Jones & Brague Mining Co., Fall Brook Coal Mining Co., Martin & Lawson, E. M. Hart & Son, Stempeck Coal Co., Joseph & James Williams, Sterling Coal Co., John R. Birguson, and Walter Hunter.

Union.—Crushed limestone for use as road material and for agricultural purposes was produced from a quarry by Faylor Lime & Stone Co., Winfield. A quantity of the material was sold to a nearby Government agency.

Venango.—Seven companies produced bituminous coal in Venango County in 1955. Tasa Coal Co., W. G. Brown Coal Co., F. R. Zuck, Boyles Coal & Supply Co., C & M Contracting Co., Bowie Coal Co., and Earl M. Reed Construction Co. all produced bituminous coal from strip mines.

Industrial Silica Corp. produced molding sand at a pit and preparation plant near Utica. Rybak-Kraft, Inc., produced structural sand and paving gravel from a pit and plant near Cooperstown (Jackson Township). Oil City Sand & Gravel Co. produced bank-run sand and gravel for structural and paving uses at a dredge near Oil City. This company also sold gravel to the Pennsylvania Department of Highways for road construction.

Warren.—Robert Schatzle produced building sand and gravel from an open pit near Warren. General Concrete Products mined and processed structural and paving sand and gravel from an open pit and preparation plant near Warren. This company also sold a quantity of the paving matcrial to the Pennsylvania Department of Highways. United States Department of Agriculture, Forest Service,

Allegheny National Forest produced a small quantity of gravel for road use and purchased a quantity produced under contract.

Washington.—Washington County led in value of minerals produced in 1955. Production of bituminous coal in Washington County greatly exceeded output in all other counties in the State and increased greatly in tonnage and value compared with 1954. Bituminous coal in Washington County was mined from both underground and strip mines; 10 leading producers were: Jones & Laughlin Steel Corp., Mathies Coal Co., Bethlehem Steel Co., Pittsburgh Coal Co., Republic Steel Corp., United States Steel Corp., Harmon Creek Coal Corp., Ontario Mining Co., National Steel Corp., and Pennview Construction Co.

Miscellaneous clay for use in manufacturing heavy clay products was mined from open pits by Monongahela Clay Products Co., Monongahela; Donley Brick Co., and Westmoreland Clay Products Co., Washington.

Output of dimension sandstone from a quarry by Malli Mines, Finleyville, was utilized mainly for dry-wall and patio construction.

Wayne.—The only stone producer in Wayne County in 1955 was Wayne Concrete & Sand Works, which crushed sandstone from a quarry and crusher near Lake Ariel for use as road material. A large quantity of the sandstone was marketed to Government agencies.

Structural and paving sand and building gravel were mined from a pit and prepared at a fixed plant near Lake Ariel by Wayne Concrete & Sand Works. Charles Caputo, Honesdale, produced a quantity of unscreened gravel for use as fill.

Westmoreland.—Leading producers of bituminous coal in Westmoreland County in 1955 were: Republic Steel Corp., Allegheny Pittsburgh Coal Co., Westmoreland Coal Co., Jamison Coal & Coke Co., Delmont Fuel Co., Seanor Mining Co., Marco Coal Co., Eagle Coal Co., Loyalhanna Fuel Co., and Dragon & Son. Most bituminous-coal production came from underground mines; a small quantity came from strip and auger mines.

J. K. Davison & Bro. produced sand and gravel usable as structural and paving material and a small quantity of molding sand at a dredge along the Allegheny River near Brackenridge. A large quantity of this material was sold to the Commonwealth of Pennsylvania for paving maintenance. The company plant was shut down temporarily during the year for major improvements.

Dimension sandstone was produced primarily for use as rough construction and flagging stone by: Ray Branthoover and J. C. Beaumont, north of Belle Vernon in Westmoreland County, and J. G. Robinson, Inc. Eidemiller Enterprises, Inc., produced and marketed sandstone of the bluestone variety as road material at the Blue Stone quarry near Whitney.

Westmoreland Clay Products Co., Youngwood, recovered miscellaneous clay from an open pit to produce heavy clay products. Fire clay of the plastic variety was produced from an open-pit mine near Youngwood by Regional Refractories, Inc., for use in manufacturing refractories. Smith Bros. & Co. mined flint fire clay from an open pit near Derry and marketed the clay for use in manufacturing refractories.

Wyoming.—Wyoming Sand & Stone Co. produced sand and gravel for building and paving uses and a small quantity of engine sand at

a pit and preparation plant near Falls. The entire output of material was sold under contract to Government agencies. East Falls Sand & Gravel near Falls produced sand and gravel for paving uses.

York.—Production at the Medusa Portland Cement Co. cement plant at York consisted of types I–II, general use and moderate heat, type III (high-early-strength), waterproof white and gray portland cement, and a quantity of masonry cements marketed under the trade names of Brikset and Stoneset.

Eight companies in York County quarried and crushed limestone for various uses. National Gypsum Co., Standard Concrete Products Co., Inc., White Pigment Corp., York Stone & Supply Co., Eli Z. Zinn, Inc., and Medusa Portland Cement Co., York, Thomasville Stone & Lime Co. and Lincoln Stone, Inc., Thomasville. Some of the crushed limestone was marketed to Government agencies.

National Gypsum Co. produced quicklime and hydraulic lime at a lime plant at York principally for use in agricultural lime, silica brick manufacture, insecticides, paper, and water purification and softening. J. E. Baker Co. produced dead-burned dolomite for use as refractory material at its York plant near Botts.

The Funkhouser Co. quarried and crushed slate for use as flour and granules at Delta.

Sand, produced principally for structural use and a small quantity as paving and fire or furnace sand, was quarried from a pit and processed at a fixed plant near York by Neuman Sand & Supply Co.

Glen-Gery Shale Brick Corp., Spring Garden Division, and York Colonial Division, York, produced miscellaneous clay from open pits for use at local plants for manufacturing heavy clay products.

General Mining Associates produced mica from an open-pit mine near York for use in paint, rubber (mold lubricant), electric insulation, and welding rods.

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